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The Purposes Of The Indebtedness Of American Cities 1880-1912

THE PURPOSES OF THE INDEBTEDNESS OF AMERICAN CITIES

1880-1912

BY

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THE PURPOSES OF THE INDEBTEDNESS OF AMERICAN CITIES: 1880-1912

I. INTRODUCTION

The determination of the causes for the growth of municipal indebtedness may be divided into three problems: First, why has debt been incurred at all? second, for what purposes has the money obtained in this way been used? and third, why has this money been spent for these particular purposes? The first concerns matters of theory and fact that have been widely discussed, while in connection with the third there has been much discussion of the general type of purpose for which certain kinds of loans are used. But there seems to have been no extended investigation and comparison of the facts that could answer the second question, altho valuable data with regard to the purposes of issue have been collected by the Bureau of the Census.

I have treated this problem from an historical point of view and have confined myself to a single type of indebtedness. Namely, those debts which are incurred with the intention of shifting a part or all of the burden of a given expenditure to a future year or years by raising the money for the present expenditure thru the use of loans to be met in those future years. It is this class of obligations which seems to be the most vital part of the problem of city indebtedness. Consequently this is a study of the purposes of issue of the so-called "funded" and "special assessment" loans.

A comparison of the indebtedness of different years would

mean little or nothing if confined to a mere statement of the amount of the debt in those years, for the real burden should be measured in relation to the financial ability of the people who must bear it. Probably a comparison of the relation of debt to the incomes of the people or to their wealth would be more satisfactory, but no suitable facts are available for such a purpose. Hence in determining the trend of indebtedness I have been confined to per capita debt both in comparing the relative burden of the debt for different purposes and of that for the same purpose at different times.

The study is limited to the larger cities because it is here that one of the foremost problems of present day public indebtedness is centered. The lower limit is set at cities of 30,000 population to accord with the Census material from which the data for the later years have been secured. But there is a vast difference in the debt problem of a city of thirty thousand and that of a city of five hundred thousand. Because of this comparisons are made of the indebtedness of five groups of cities based upon their population. These are the five groups used in the later Census reports: Group I consisting of those cities with a population of 500,000 or over; Group II, cities with a population of over 300,000 and less than 500,000; Group III, cities with a population of over 100,000 and less than 300,000; Group IV, cities with a population of over 50,000 and less than 100,000; and Group V, cities with a population of over 30,000 and less than 50,000.[1] It has also seemed desirable to

[1]Two cities included in 1904 that proved in 1910 to have been less than 30,000.

consider certain geographical sections by themselves and in comparison with others, and for this purpose I have used the five large divisions into which the Census groups the states for comparative purposes, the North Atlantic, South Atlantic, North Central, South Central and Western.[2]

It will be noticed that as a result of the growth of cities from one group to another the cities in the various population groups change from year to year, while those in the geographical sections change only thru the increase in the number of cities considered.

In the years compared I have been necessarily restricted by the material available. For the years from 1880 to 1904 there are but three reports, covering the fiscal years 1880, 1890 and 1904, that give material which can be used. From 1904 to 1912 annual reports are available. These reports are all Census publications. The first two were the reports on Wealth, Debt and Taxation of the tenth and eleventh censuses and the later reports are found in the sepcial bulletins of the Bureau relating to cit-

[2]These states arranged according to sections are as follows:

NORTH ATLANTIC	NORTH CENTRAL	SOUTH CENTRAL	WESTERN
New England states	Ohio	Kentucky	Montana
New York	Indiana	Tennessee	Idaho
New Jersey	Illinois	Alabama	Wyoming
Pennsylvania	Michigan	Mississippi	Colorado
SOUTH ATLANTIC	Wisconsin	Louisiana	New Mexico
Delaware	Minnesota	Arkansas	Arizona
Maryland	Iowa	Oklahoma	Utah
District of Columbia	Missouri	Texas	Nevada
Virginia	North Dakota		Oregon
West Virginia	South Dakota		Washington
North Carolina	Nebraska		California
South Carolina	Kansas		
Florida			
Georgia			

ies of over 30,000 population. Because of the paucity of material concerning the earlier years it has been necessary to make a comparison of the debts of the four years 1880, 1890, 1904 and 1912, with a view to learning from such a study the situation in those particular years and thus noting the changes that seem to have occurred during each of the intervening periods. The annual reports covering the later period have been used when it has seemed advisable.

II. GROWTH OF THE TOTAL FUNDED AND SPECIAL ASSESSMENT DEBT.

Before considering the more particular aspects of the subject it will be best to show the changes that have taken place in the total indebtedness[1] during each of the three periods covered by the available data(1880-1890; 1890-1904; 1904-1912). I shall here consider each period separately and comment upon the growth of the amount and of the burden of the total debt[1], both of all cities and of the separate population groups and geographical sections.

FIRST PERIOD: 1880-1890

During the first decade, from 1881 to 1890, the total number of cities[2] grew from fifty-nine to ninety-nine, or 67.8 per cent, and the population increased from 8,059,551 to 13,101, 265, or 62.7 per cent, whereas the debt, growing from $557,821,

[1]Hereafter the words "debt" and "indebtedness" will refer to the combined funded and special assessment indebtedness of the class of cities here considered, unless otherwise indicated.
[2]Hereafter the word "cities" will refer to those with a population of over 30,000 in the particular year mentioned, unless otherwise specified. My figures for the total number of cities and for the total population differ a little from the Census figures. Thus in the 1880 and the 1890 totals I did not include Washington because the purposes of the indebtedness of that city were not available in 1890 and nearly all of it was given as for funding in 1880. Long Island City, Brooklyn and New York I have considered as one in each year; Allegheny figures have been added to those for Pittsburg, and those of South Omaha to those of Omaha. Altho other consolidations have been made it has not been possible to combine them here. Long Island City was under 30,000 in 1880 so that the total population figures I have used do not agree with those of the Census for that year as given in the Financial Statistics of Cities for 1912, page 15.

TOTAL FUNDED AND SPECIAL ASSESSMENT DEBT

	Year	Total debt	Per capita burden	Number of cities	Per cent of total debt	Per cent population of total population
All Cities	1912	$2,655,919,772	$90.58	195	100	100
	1904	[a]1,438,867,223	66.88	151	100	100
	1890	647,872,463	49.45	99	100	100
	1880	557,821,077	69.21	59	100	100
Population Groups						
Group I	1912	1,627,239,864	129.05	9	61.3	43.0
	1904	835,294,882	93.17	6	58.1	41.7
	1890	257,312,552	57.19	3	39.7	34.3
	1880	264,046,976	84.08	3	47.3	39.0
Group II	1912	277,803,739	80.91	9	10.5	11.7
	1904	144,391,064	51.88	8	10.0	12.9
	1890	125,278,705	74.63	4	19.3	12.8
	1880	84,722,101	81.02	3	15.2	13.0
Group III	1912	390,892,583	64.57	38	14.7	20.6
	1904	212,880,906	54.14	25	14.8	18.3
	1890	141,340,845	44.44	17	21.8	24.3
	1880	125,806,277	63.56	12	22.6	24.6
Group IV	1912	214,226,200	52.67	57	8.1	13.9
	1904	144,477,624	44.03	45	10.0	15.3
	1890	73,781,832	36.04	30	11.4	15.6
	1880	35,749,929	41.13	14	6.4	10.8
Group V	1912	145,757,386	46.16	82	5.5	10.8
	1904	[a]101,822,747	39,89	67	7.1	11.9
	1890	50,158,529	29.56	44	7.7	12.9
	1880	47,495,794	46.34	26	8.5	12.7
Geographical Sections						
North Atlantic	1912	1,756,377,295	123.87	79	66.1	48.4
	1904	990,228,312	89.76	66	68.8	51.3
	1890	423,403,980	61.06	45	65.4	52.9
	1880	402,184,809	83.33	30	72.1	59.9
South Atlantic	1912	134,534,510	69.77	18	5.1	6.6
	1904	82,171,550	57.38	12	5.7	6.7
	1890	59,255,685	73.23	8	9.1	6.2
	1880	36,377,221	65.37	6	6.5	6.9
North Central	1912	434,771,301	49.05	58	16.4	30.2
	1904	260,510,906	38.67	47	18.1	31.3
	1890	122,859,108	30.75	30	19.0	30.5
	1880	86,773,348	44.37	16	15.6	24.3
South Central	1912	141,859,859	71.99	23	5.3	6.7
	1904	62,953,426	52.73	15	4.4	5.5
	1890	38,022,690	55.26	8	5.9	5.3
	1880	27,670,199	66.39	4	5.0	5.2
Western	1912	188,376,807	79.21	17	7.1	8.1
	1904	43,002,992	38.42	11	3.0	5.2
	1890	4,321,000	6.40	7	.7	5.2
	1880	4,815,500	15.83	2	.9	3.8

[a]Including two cities of less than 30,000, wrongly estimated in 1904 to be over 30,000.

077 to $647,872,463, increased but 16 per cent.[3] In consequence of this comparatively small growth in the amount of the debt the per capita burden declined approximately twenty dollars from the high average of 1880, or from $69.21 to $49.45(28.4 per cent).[4]

This first period with its relative decline is an interesting phase in the development of municipal indebtedness; for the average burden[5] in 1880 was not only higher than that of 1890, but it was also higher than that of 1904. In this connection, however, it must be remembered that most of these debts are in the form of long term bonds, and hence the debt figures of each of the years considered simply reflect what has been the tendency for some years past and do not necessarily indicate the situation in these particular years. Thus it seems highly probable that the greatest relative indebtedness reflected in the 1880 figures occurred in the years immediately preceding the crisis of 1873, a crisis which marked the culmination of the boom period that followed the Civil War. In the municipal field the spirit of the time is known to have led to enormous

[3]The combined state and local debt grew from $1,123,278,647 to $1,135,210,442 in this decade. "This increase, comparatively insignificant, is mainly due to the issue of bonds by municipalities and counties for the supply of gas or water or for the construction of permanent improvements made necessary by the rapid growth in population of many of the cities and counties during the decade". Eleventh Census, report on Wealth, Debt and Taxation, Part I, page 290.

[4]Professor Plehn shows that during this same decade the national debts of the world increased but .38 per cent, a fact which he attributes to the payment of a large part of the debt of the United States. Plehn: Introduction to Public Finance, page 367.

[5]The terms "per capita debt", "per capita burden", "average burden" and "burden", are considered as synonymous thruout.

aids to private corporations, especially railroads, and it is safe to assume that during a period of such financial optimism debts for other purposes more purely municipal in their character were freely issued. That such was the case is made evident by the debt figures for 1880; but following the panic there was a reaction which found expression in the smaller relative debt of 1890.

That caution followed the panic of 1873, or at least that caution was attempted, is indicated by the general movement toward debt restriction at that time, especially debts that had for their purpose the direct aid of private enterprise. Thus from 1870 to 1877 eighteen states[6] passed constitutional restrictions limiting the debt-incurring powers of their municipalities. Among these were Pennsylvania, New Jersey, New York and Connecticut, states in which a large percentage of the cities were located, with eight of the states of the two southern sections, sections whose cities had large per capita debts in 1880.

That the largest municipal issues of funded debt occurred in the years just before and immediately following this panic of 1873[7] is made evident by a study of the amounts issued during these years and still outstanding in 1880 by cities that had

[6]Alabama, Arkansas, California, Colorado, Connecticut, Florida, Georgia, Illinois, Louisiana, Minnesota, Missouri, New Hampshire, New Jersey, New York, North Carolina, Pennsylvania, Tennessee and Texas. From Horace Secrist: An Economic Analysis of the Constitutional Restrictions upon Public Indebtedness in the United States, Bulletin of the University of Wisconsin, No. 637, April 1914; page 60.

[7]The large debt following the panic may have been partly for funding and refunding and in part for issues authorized but not yet issued when the panic came.

over 7,500 inhabitants in that year.[8] Of such bonded debt outstanding there seems to have been an almost steady increase in the annual issues after 1866 and continuing thru the period of the panic. Growing from $8,995,092 in 1866 to $26,614,468 in 1869 the total amount of these debts increased over twenty millions during the next year and by 1872 had reached $62,064,355. In 1873, the year of the panic, there was a drop of eighteen millions, but the amount credited to 1874 was the largest of any year--$62,421,466. Thereafter there were rapid declines until $24,021,688 was reached in 1878.

AMOUNTS OF BONDED DEBT ISSUED IN YEARS NAMED OUTSTANDING IN 1880:
By cities of over 7,500 inhabitants in 1880: 1860-1879.[9]

Total	$681,616,460		
Previous to 1860	51,222,558	1871	$53,978,592
1860	3,698,815	1872	62,064,355
1861	6,176,039	1873	44,338,682
1862	5,529,275	1874	62,421,466
1863	5,832,302	1875	52,453,742
1864	21,803,515	1876	28,873,539
1865	15,335,012	1877	30,947,187
1866	8,995,092	1878	24,021,688
1867	18,622,967	1879	45,435,105
1868	29,348,760	1880	6,038,145
1869	26,614,468	Unspecified	30,489,695
1870	47,375,361		

AMOUNTS OF BONDED DEBT ISSUED IN YEARS NAMED OUTSTANDING IN 1880:
By cities of over 8000 inhabitants in 1902:1882-1890.[10]

Total in 1902	$1,561,433,680		
Prior to 1882	140,059,177	1886	$17,449,566
1882	10,484,020	1887	35,104,412
1883	9,968,935	1888	45,900,908
1884	13,311,591	1889	42,736,710
1885	16,710,154	1890	48,982,168

Altho the Census report for 1890 does not give the time of issue of the debts outstanding in that year it is possible

[8]Tenth Census, Vol. VII, page 290. [9]ibid.
[10]Report on Wealth, Debt and Taxation, page 448-9.

to gain some light by the use of figures found in the report for 1902.[10] Of the bonded debt of cities with a population of over 8000 in 1902 it appears that but a very small amount was issued in the early eighties. Thus, from 1882 to 1886 bonds to the amount of but $67,914,266 were issued which were still outstanding in 1902, as compared with $57,475,296 issued from 1862 to 1866 and still outstanding in 1880. As the total debt of 1902 was well over twice that of 1880[11] it is evident that, if of the bonds issued in these two twenty years periods preceding 1880 and 1902 approximately the same proportion were long term obligations, there was a very great relative decline[12] in new issues of funded debts following 1880 and continuing thru more than half the following decade, while we have already seen that there was such a decline from 1875 to 1879. Such an assumption seems near enough the truth for this purpose and the conclusion may be drawn that the issues during the early eighties were comparatively small and in marked contrast to the large issues during the same part of the two previous decades:-1861 to 1870 and 1871 to 1880. Consequently it appears that the low debt of 1890 was due to the comparatively small issues that followed the panic of 1873 and continued thru 1886.

The restrictions placed upon municipal indebtedness during the decade of the seventies and the spirit of caution that seems to have prompted them were doubtless strong factors in

[10] Report on Wealth, Debt and Taxation, page 448-9.
[11] $681,616,460 in 1880 and $1,561,433,680 in 1902.
[12] Declined in relation to population.

thus diminishing the rapid increase of municipal indebtedness. But the crisis of 1873 and the unrest during the years that preceded and followed the panic of 1884, together with the high interest rates[13] during the early eighties must be considered as other factors which greatly affected municipal bond issues as reflected in the figures of 1890.

This tendency was confined to no one part of the country and to no particular size of cities. Every population group[14] had a lower per capita debt in 1890 than in 1880 while among the geographical divisions only the South Atlantic section[14] had an increased burden.

Considering the population groups separately it is seen that during this first decade(1880-1890) the population of the three largest cities(Group I) increased a million and a quarter, altho the amount of their debt actually declined nearly seven millions. Consequently, the per capita debt fell from $84.08 in 1880 to $57.19 in 1890,--the only one of the four years studied in which the cities of this largest group did not have the greatest per capita debt.[15] In each of the other population

[13]According to the Census of 1890(-Wealth, Debt and Taxation, Part I, page 856-7) the average interest rate for the state and local debt in 1880 was 6.17 per cent and that for 1890 was 5.29 per cent.

[14]Hereafter "group" will refer to population groups and "section" to the geographical divisions of the country.

[15]Philadelphia's debt declined some fifteen millions during this ten years while Chicago and New York increased their debts but little. The small growth in New York's debt, we are told, was due to a reaction following the burdens imposed by the Tweed ring. "As late as 1874 the city could secure no better rate than 5 per cent on the funding bonds. The people were therefore little inclined to borrow further, and of the forty-

groups the number of cities, the population, and the amount of the debt increased, but in every one the per capita burden declined.

Among the geographical sections as well, the average burden fell in all but the South Atlantic, altho the amount of the debt increased in all but the Western section.[16]

SECOND PERIOD: 1890-1904

In the fourteen years of the second period the amount of the debt more than doubled and the per capita burden grew from $49.45 to $66.88, an increase of 31 per cent. The number of cities had increased from 99 to 151, or 52 per cent, and their population from 13,101,265 to 21,514,149, or 62 per cent.[17]

The general progress in the growth of the amount of the debt can be determined by a study of the bonded debt outstanding in 1902 of cities that had a population of over 8000 in that year.[18] Of the total amount the largest sums were issued after 1887. Commencing with that year the amounts seem to have almost constantly increased. After growing from $35,104,412 in

one millions of new loans contracted during the decade from 1875 to 1884 a considerable part were unavoidable refundings of old obligations....Since 1884....the bond issues....have averaged over twice as much yearly as during the preceding ten years." From Durand, Finances of New York City(1898), page 319 ff.

[16]The total debt of the Western section declined slightly altho the number of cities contributing to it increased from two to seven.

[17]These population figures differ a little from those given in the Statistics of Cities for 1904 as I have made two corrections in the estimates of that year.

[18]Report on Wealth, Debt and Taxation, page 448-9.

1887 to $87,438,245 in 1894 there followed two years of slight

AMOUNTS OF DEBT ISSUED IN YEARS NAMED AND OUTSTANDING IN 1902; By cities of over 8000 inhabitants in 1902: 1891-1902[18]

Total	$1,561,433,680		
Previous to 1891	390,707,641	1897	$93,304,734
1891	58,485,440	1898	77,733,166
1892	66,879,786	1899	80,365,728
1893	64,178,811	1900	102,968,237
1894	87,438,245	1901	120,817,125
1895	80,131,221	1902	121,232,078
1896	70,903,826	Not reported	156,287,642

declines when a new maximum of $93,304,734 was reached in 1897. Then, following smaller issues in 1898 and 1899, there was another increase in 1900 and by 1902 the total had reached $121,232,078; while the largest issues of any year were recorded for 1904.[19]

It appears from these figures that the unsettled conditions at the time of the panic of 1893 had no great effect upon municipal bond issues. In commenting on this the Commercial and Financial Chronicle declared[20] that while the previous ten months to May 1892 had been a bad time in which to market bonds, municipals sold more favorably than railroads, while in 1894 we read[21] that "As our examination of municipal finances is extended year by year we become more favorably impressed with the securities issued....the securities earliest to regain the confidence of the investing public after the panic and depression of last summer were municipal bonds"; while it later declared[22]

[18] Wealth, Debt and Taxation:1902, page 449.
[19] Commercial and Financial Chronicle, State and City Supplement, May 1905, page 1998.
[20] Ibid, May 1892
[21] Ibid. April 21, 1894
[22] Ibid. April 1895, page 3.

that from 1893 to 1895 municipal bonds found a better market than did either railroads or industrials, a fact which was attributed to the demand for conservative investments.

Referring next to the specific population groups and geographical sections we learn that during this second period the cities of the largest size(Group I, over 500,000) while doubling their number and population more than trebled their total debt. In consequence of this their average burden grew from $57.19 in 1890 to $93.17 in 1904--an amount nearly 40 per cent greater than the average burden for all cities.[23] In the cities of Group II(300,000 to 500,000) alone did the per capita burden decline, for altho the amount of the debt increased nearly twenty millions the population also increased and the Group's burden fell $22.75. In each of the three smaller groups(Groups III, IV, and V: 30,000 to 300,000) the average burden increased approximately ten dollars.

Within the five geographical divisions there was not quite so uniform a tendency for the burden to increase. That of the North Atlantic division increased over twenty-eight dollars during this second period, that of the Western cities over thirty-two dollars and that of the North Central section nearly eight dollars; but in the two southern sections the average burden declined approximately sixteen dollars in the South Atlantic cities and nearly two and one-half dollars in the South Cen-

[23]Of the six cities in Group I in 1904 all but St. Louis and Baltimore had largely increased their debts over those of 1880. New York's increased from $187,770,732 to $552,856,877.

tral, altho even in these sections the amount of the debt increased. The average burden($89.76) of the North Atlantic section was in this year(1904) 56 per cent greater than that of the South Atlantic section, whose burden was still second. The increase of 500 per cent in the debt of the Western sections is an especially noticeable phenomenon, altho its burden as in previous years was lower than that of any other section.[24]

THIRD PERIOD: 1904-1912

Turning next to the third and last period, which covers the years from 1904 to 1912, the total debt increased from $1,438,867,223 to $2,655,919,772,-the largest absolute increase of any period considered. The amount in 1912 was nearly double that of 1904, four times that of 1890 and almost five times that of 1880. Fourty-four new cities had reached the thirty thousand mark since 1904 and the population had increased nearly eight millions, almost as much as during the previous fourteen years, but the debt had grown so rapidly that the average burden had reached $90.58, an increase of 36 per cent over 1904 and of 30 per cent over 1880.[25]

[24]It is thus evident that the increase from 1890 to 1904 was not quite so general as was the decline from 1880 to 1890.

[25]Accompanying this increased indebtedness has been an increased interest rate for municipal loans, in the last period. From 1880 to 1890 the average rate of interest for combined state and local loans fell from 6.17 per cent to 5.29 per cent(See the 1890 report, pages 856-7), by 1902 it had reached4.1per cent. (See Wealth, Debt and Taxation, 1902, page 143.) While these figures may throw but little light on the particular classes of cities that we are studying they probably do show the trend. But between 1904 and 1912 we can observe a noticeable increase

This increased indebtedness was even more general than was the relative decline during the first period; for every population group and every geographical section had a higher per capita debt in 1912 than in 1904. Furthermore, with the exception of the cities of Group II(300,000 to 500,000) and Group V(30,000 to 50,000) and the South Atlantic section, the per capita debt of the groups and sections in 1912 was the highest of any year.[26]

The per capita burden of the nine largest cities(Group I)

in the average rate for cities of over 30,000 inhabitants. As can be seen from the accompanying table, there was a gradual increase from 1905 to 1911 in the average rate of interest of all cities and for all population groups.

AVERAGE RATE OF INTEREST: 1904-1911

Year	All cities	Groups I and II	Group III	Group IV	Group V
1904	3.83				
1905	3.68	3.68	4.17	4.32	4.36
1906	3.85	3.68	4.21	4.25	4.41
1907	3.89	3.75	4.11	4.26	4.45
1908	3.92	3.79	4.21	4.28	4.43
1909	3.92	3.77	4.28	4.34	4.52
1911	4.02	3.91	4.29	4.36	4.40

It will be noticed that the larger the group the smaller is the average interest rate; a similar tendency has been true for the North Atlantic section--facts which should be born in mind when considering the larger relative issues of Group I and of the North Atlantic section.

Altho the nominal rates given in this table are somewhat higher than the actual rates because "the great majority of cities are forbidden by statute to issue debt obligations at a discount", but this cannot differ greatly from year to year and so these rates must reflect the general trend.(See Statistics of Cities: 1912, page 109.)

[26]Even in these cases it was exceeded by but one other year--by the burden of 1880 in the case of the two population groups and by that of 1890 for the South Atlantic cities.

grew more rapidly than that of any other group in this last period. With the highest average burden of any group in 1904 their debt increased until the burden of 1912 was 35 per cent higher than that of 1904 and 59 per cent larger than that of the next lower group. The burden in Group II(300,000 to 500,000) increased nearly thirty dollars, while only in the two smaller groups(IV-50,000 to 100,000; V-30,000 to 50,000) did it increase less than ten.[27]

The burden of every geographical section increased more than ten dollars in this period; the greatest absolute and relative increase occurring among the Western cities in which there was an increase of $40.79 whereas the total burden in 1904 was but $38.42.[28] Because of this high average burden the Western

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[27]The smallest increase was over six dollars, in Group V.

[28]In discussing the municipal bond issues of 1912 the Commercial and Financial Chronicle states that(State and City Supplement, May, 1913, page 5) "in the newer parts of the country, where most development is going on....the increase in the output of new bonds is especially pronounced." Altho this is true the increase for the cities here considered has not been so rapid as the growth of their population. Neither is the increase among the cities here considered so great as they state. For whereas the municipalities of the South Atlantic, South Central and Western sections as given in the Chronicle increased from 13 per cent of the total debt in 1904 to 33 per cent in 1912, the debt of the cities of over 30,000 in these sections increased from 12 per cent to 17 per cent.

Los Angeles, however, had a net debt in 1913 that was 1,035,2 per cent greater than its debt in 1902, nearly two-thirds of which was incurred for the city water system; and San Francisco's debt increased 5,669.4 per cent. The Census states that this was probably the highest rate of increase of any important city in the United States and that it was "due to the necessity for rebuilding and repairs in practically every branch of the municipal organization after the earthquake and fire of 1906." From "County and Municipal Indebtedness, 1913, 1902 and 1890 and Sinking Fund Assets 1913; page 28.

section became second only to the North Atlantic in the burden of indebtedness they carried in 1912, while in the three previous years their burden was the smallest among all the sections. Despite this large increase in the last eight years the burden of the North Atlantic cities was still much greater than that of the Western; for their burden had grown from $89.76 in 1904[29] to $123.87 in 1912, which was 56 per cent greater than that of the Western cities.

Returning again to the debt for all cities in this last period, it can be shown that in every year from 1904 to 1912 the total indebtedness increased, and increased by larger and larger amounts from year to year.[30] Another light is thrown upon this tendency when we look at the increase in the total debt of all kinds[31] outstanding in each of the years of this period.[32] In every year the receipts from debt obligations exceded the payments for their redemption or cancellation by amounts ranging from $64,832,486 in 1904, which was the lowest figure, to over one hundred seventy-five millions in 1912. The excess of the receipts from debt obligations over cancellations thereof increased

[29]This was 56 per cent greater than any section in 1904.

[30]TOTAL FUNDED AND SPECIAL ASSESSMENT DEBT OUTSTANDING EACH YEAR: 1904-1912.

1904	$1,438,867,223	1909	$2,084,229,062
1905	1,522,708,795	1910	2,279,284,838
1906	1,617,653,678	1911	2,505,496,245
1907	1,757,339,338	1912	2,655,919,772
1908	1,937,284,018		

[31]Includes "all bonds, temporary and other loans, including overdrafts by the treasurer, and all warrants outstanding at the close of the year."

[32]These facts are taken from the annual reports of the Census.

155 per cent from 1902 to 1912. In the same time the population increased but 52 per cent.

In conclusion we should note that in point of population, of the burden of indebtedness, and of number of cities, the cities of the North Atlantic section of the country have been predominant among the geographical sections; while the cities of Group I(over 500,000) have likewise predominated among the population groups in total population and in burden of indebtedness.[33] In every year the debt of these largest cities(Group I) and of the North Atlantic section was a larger percentage of the total indebtedness than was their population of the total population; while with but few exceptions the debts of the other groups and sections was a smaller part of the total debt than was their population of the total population. This shows that the largest cities and the cities of the northeast are the big debtor cities.[34]

Neither does there appear to have been any tendency for this to change. In fact, it is becoming more noticeable. Thus

[33]The importance of New York's debt and of that of Group I as compared with that for all cities is indicated in this table.

COMPARATIVE INDEBTEDNESS*OF ALL CITIES, GROUP I, AND NEW YORK CITY

Year	All Cities	Group I	New York City
1912	$2,655,919,772	$1,627,239,864	$1,088,613,547
1904	1,438,867,223	835,294,882	552,856,877
1890	647,872,463	257,312,552	180,033,934
1880	557,821,077	264,046,976	187,770,732

*Indebtedness for all purposes.

[34]There is a causal connection between these facts; i.e. a large number of the largest cities, including New York, have been in this section each year.

the debts of the medium and larger cities of Groups II(300,000 to 500,000) and III(100,000 to 300,000) and of the smallest cities(Group V) were smaller parts of the total in 1912 than they were in 1880,[35] and altho the debt of the smaller cities of Group IV(50,000 to 100,000) increased slightly in this respect it was not so great an increase, relatively, as was that of their population. But in contrast to these groups, altho the population of the largest cities(Group I) became a larger part of the total population their total debt increased even more rapidly in its relation to the total indebtedness.[36] Among the geographical sections the North Atlantic cities comprise the only section in which the total debt has been in each year a larger part of the total indebtedness of all cities than was its population of the total population. Moreover this difference seems to be growing, for altho this section's share of the total debt declined its population has declined even more in its relation to the total population.[37] The debt of the two southern sections was each year about one per cent smaller in importance than was their population; but it is very noticeable that the debt of the North Central cities has been a much smaller part of the total debt each year than their population has been of the total pop-

[35]Altho the population of each of these three groups declined in relative importance it was less in each case than was the decline in their share of the total debt.
[36]The debt of these nine cities was almost as great as that of the 79 cities in the North Atlantic section--61.3 per cent and 66.1 per cent of the total debt, respectively.
[37]The former fell from 72.1 per cent in 1880 to 66.1 per cent in 1912 and the latter from 59.9 per cent to 48.4 per cent.

ulation,-a difference which has grown greater since 1880.[38] Thus this section and the Western section are the only ones in which the population has shown a particularly noticeable increase in relative importance; but the relative importance of the debt of the North Central cities increased less than one per cent, whereas that of the Western section grew from nine-tenths of one per cent of the debt of all cities in 1880 to 7.1 per cent in 1912. But even in this later year its indebtedness was not so large a part of the total debt as was its population of that total.

To summarize: So far as can be ascertained from the available data the debt figures of 1880 reflect a period of large indebtedness which seems to have reached its height in 1874. Following this year was a period of relatively small issues which lasted thru the financial difficulties before and following the year 1884. The effects of this period are shown in the figures of 1890. This period of small issues, covering some twelve years, was succeded by a time of increased indebtedness and the figures for 1904 and 1912 reflect this continued increase,-an increase which was especially marked after 1904.

[38] Thus in 1880 their population was 24.3 per cent of the total and their debt 15.5 per cent, whereas in 1912 their population had grown to 30.2 per cent of the total and the debt to but 16.4 per cent.

III. THE TOTAL PRODUCTIVE DEBT.

Before indicating the changes that have taken place in the debts for particular purposes it is advisable to study the changes that have occurred in the relative importance of loans incurred for productive and nonproductive purposes.[1]

In making this distinction the general lines laid out by the recent Census reports have been followed. These define municipal productive property as "the land, buildings, structures, furniture, machinery, tools and other equipment that are used by the cities and other municipalities in connection with their public service enterprises."[2]--properties which are not only salable but which are generally considered as capable of producing an income which can make them self-sustaining. Municipal nonproductive properties include "all other municipal properties."[3] In the division used here it has been assumed that the debts for municipal service enterprises of the 1904 report and those for public service enterprises and investments in the 1912 report were for productive purposes, while debts for all other purposes have been considered nonproductive; and in considering the figures of 1880 and 1890 this same division has been maintained so far as possible, by considering waterworks, cemeteries, improvements of rivers and harbors, for both years, and Philadelphia's gas debt for 1880, as the productive debts.

1. Perhaps the term "commercial" used by some writers (as Professor H. C. Adams in his Public Finance) and used by the Census with regard to its expense figures, better expresses the difference between these two kinds of purposes, but as the definition used by the Census seems adequate it would be unfortunate to add to already numerous classifications.
2. Financial Statistics of Cities, 1912, page 45.
3. Professor Adams in his Public Debts (1892), page 306-7, makes a three-fold classification of local debts: 1, debts incurred for rendering a direct tho general public service, as highways, buildings, sewage; 2, debts incurred to render a direct public service, but of a particular character, as water, gas, heating plants; and 3, grants of assistance to private corporations, on the belief that they will serve the public indirectly. The latter class of debts has become so unimportant since this book was written and have generally been considered so disastrous, that they have here been included with the nonproductive debts.

Table 2: DEBT FOR PRODUCTIVE PURPOSES: BY GEOGRAPHICAL SECTIONS AND POPULATION GROUPS: 1880,1890, 1904 and 1912.

Year	1912	1904	1890	1880
All Cities				
Per capita burden	$28.62	19.63	13.81	16.99
Per cent of total debt	31.6	29.4	27.4	24.5
Population Groups				
Group I				
Per capita burden	$43.06	31.42	17.33	18.05
Per cent of total group debt	33.4	33.7	24.1	21.5
Per cent of total productive debt	64.7	66.7	43.1	41.4
Group II				
Per capita burden	$30.37	6.68	21.77	26.56
Per cent of total group debt	37.6	12.8	29.1	32.8
Per cent of productive debt	12.4	4.4	20.2	20.3
Group III				
Per capita burden	$16.35	15.34	10.08	16.26
Per cent of total group debt	25.3	28.3	22.7	25.6
Per cent of productive debt	11.8	14.3	17.7	23.5
Group IV				
Per capita burden	$14.17	10.80	9.86	10.67
Per cent of total group debt	26.9	24.5	27.3	25.9
Per cent of productive debt	6.9	8.4	11.2	6.7
Group V				
Per capita burden	$11.14	10.26	8.35	10.72
Per cent of total group debt	24.2	25.7	28.2	23.1
Per cent of productive debt	4.2	6.2	7.8	8.0
Geographical Sections				
North Atlantic				
Per capita burden	$43.50	31.42	17.33	18.05
Per cent of total section debt	35.1	34.8	31.4	25.2
Per cent of productive debt	74.2	81.3	73.6	73.9
South Atlantic				
Per capita burden	$16.75	8.95	21.24	16.48
Per cent of total section debt	24.1	15.6	29.0	25.2
Per cent of productive debt	3.8	3.4	8.9	5.9
North Central				
Per capita burden	$10.00	6.65	6.35	12.69
Per cent of total section debt	20.4	17.2	20.6	28.5
Per cent of productive debt	10.6	10.6	14.0	18.5
South Central				
Per capita burden	$16.39	7.53	5.50	3.95
Per cent of total section debt	22.7	14.3	9.9	5.9
Per cent of productive debt	3.8	2.1	2.1	1.2
Western				
Per capita burden	$29.05	10.81	1.93	.05
Per cent of total section debt	36.7	27.9	30.2	.3
Per cent of productive debt	8.2	2.9	.7	*

*Too small to register on this table.

Altho a simple classification to make it has not proved possible to divide the debt accurately into these two parts because of inaccuracies in the figures used. The most probable sources of error arise from the impossibility of properly classifying the item called "miscellaneous" in 1880 and 1890 and that called "refunding" in all years, - items here included with the nonproductive debt. Among the miscellaneous purposes of 1880 and 1890 there were undoubtedly included some productive debts.[4] But an analysis of the footnotes to the 1880 report[5] lead to the conclusion that the greater part of these debts were for nonproductive purposes. In the 1912 report the item "refunding" is assumed to be for nonproductive purposes,[6] and this appears to be the more correct assumption for all years, and the safest, because while there is nothing to guide us in the earlier years, we know that public service industries are generally considered as a special type of city enterprise and their accounts are frequently, if not generally, separately kept. The Census investigators have found that data concerning the debt for the more important of these purposes are the most reliable they obtain.[7] So it seems probable that in more cases than not when such bonds were refunded it was possible to continue them under the proper purpose. However, we cannot ignore this source of error and we should note especially a few cases in which the refunding debt was very large. Thus in the South

4. For example, Philadelphia's gas debt of $5,499,400, which I have placed under the productive debt.
5. Tenth Census, Vol. VII, pages 684-699.
6. Such an assumption is evidently made in determining the relation of the debt to the value of the city property, for the total refunding debt is divided between public improvements and other general purposes, all of which are considered as nonproductive. And that this is so intended seems further evidenced from the following warning: "....it being possible that some of that tabulated for refunding was incurred for constructing municipal service or public service enterprises." (Page 111). It should be added at this point that the item "all other" general governmental purposes of 1904 evidently includes the debt for Cincinnati's Southern Railway property. But Mr. Grogan assures me in a personal letter that this was practically the only large item in which the productive debts of 1904 as here considered, differed from those of 1912. Financial Statistics of Cities, 1912.
7. "The classes of debt obligations by purpose for which issued that are most accurately shown for all cities are those for water-supply and lighting systems." Financial Statistics of Cities, 1912, page 111.

Atlantic cities it has always been a large item, ranging from 34.1 per cent of the section's total debt in 1880 to 13 per cent in 1912; while in the South Central cities it was 56.1 per cent of their debt in 1880 and 44.7 per cent in 1890.

Altho such large refunding debts as these invalidate any comparisons with regard to their productive debt in the earlier years, they do show one result of the condition existing after the Civil War. These were Confederate cities and it seems safe to assume that the greater portion of the large refunding debts in 1880 and 1890 were a direct outgrowth of the disastrous financial programs of many southern cities during the War and the years of reconstruction.[8]

With these limitations of the available data in mind we can now turn to a discussion of the debts for productive and nonproductive purposes with a view to determining the trend of their relationships during each of the periods studied.

The relative importance of the productive debt of all cities appears to have slowly but steadily increased, showing gains of from two to three per cent in its relation to the total debt in each of the years studied, and increasing during the whole period from 24.5 per cent of the total to 31.6 per cent.[9] The per capita burden of this class of debt likewise grew from $16.99 to $28.62, of which later figure $8.99 was the increment of the last eight years.

8. Most of the $12,404,550, refunding debt of 1880 of the South Atlantic cities was found in the debts of Richmond ($4,469,345), Charleston($4,242,755), and Savannah ($3,375,000); while most of the South Central debt was found in the single city of New Orleans which reported a refunding debt of nearly thirteen millions. Memphis and Houston each had over a million of such debt. In 1890 Charleston, Savannah and Augusta in the South Atlantic section, and Mobile, Memphis and New Orleans in the South Central section had practically the whole of the refunding debt.

9. Plehn, Carl, Introduction to Public Finance p. 398. Professor Plehn states in speaking of productive enterprises that "the bulk of local debts the world over are of this general character." Obviously this is not so in the United States for cities over 30,000. The ratio is much greater, however, at least in Germany and England.

Among the population groups it appears that in all but the middle cities (Group III) the productive debt of 1912 was reported as a larger share of each group's total debt than it was in 1880. The increases of the 1912 percentages over those of 1880 varied from one per cent for the smaller cities of Group IV to 11.9 per cent in Group I (over 500,000), altho in 1890 and 1904 there were variations above or below these percentages in every group.[10] Such a variation is especially noticeable in the cities of Group II (300,000 to 500,000), whose debt for productive purposes fell from 32.8 per cent of the group debt in 1880 to 12.8 per cent in 1904.

In each of the four years the largest cities (Group I) had a larger share of the total productive debt than those of any other group.[11] This has been an increasing proportion and with the exception of 1880 it has been a larger part of the productive debt of all cities than has its total debt been of the total debt of all cities. This is the only group which shows a large increase in its share of productive debt, a share that grew from 41.4 per cent in 1880 to 64.7 per cent in 1912. Moreover, it is only in the large cities, Group I and Group II, that the productive debt of 1912 is a noticeably larger share of their group debt than it was in 1880.[12] In Group III it was in

10. See Table 2.
11. 1880 - 41.4 per cent; 1890 - 43.1 per cent; 1904 - 66.7 per cent and 1912 - 64.7 per cent.
12. The productive debt increased 11.9 per cent in Group I and 4.8 per cent in Group II.

practically the same position (25.3 per cent) in 1912 as in 1880 (25.6 per cent), while in the smaller cities of Groups IV and V it was but one per cent greater. In all years the productive debt of the three smaller groups has been approximately one-fourth of their total debt; in Group I it has grown from a little more than one-fifth to one-third, while in Group II it was a little under one-third in 1880 and declined to one-eighth in 1904; but by 1912 it had grown to nearly two-fifths of the group debt, the largest share in any group in any year.

With the exception of Group II in 1904 the per capita burden of the productive debt of the larger cities (Groups I and II) has been larger than that in the groups of smaller cities. Group I had a burden more than twice that of any other group in 1904 and it was still larger in 1912; while the cities of Group II had the largest burden in 1880 and 1890, and altho the smallest in 1904, in 1912 they had a per capita burden that was fourteen dollars larger than that of any but Group I.

Turning to the geographical divisons we find as the most striking facts that the cities of the North Atlantic section had by far the largest productive debt in each year, while in contrast with the relative decline of their total debt there was a slight increase in the importance of their productive debt. Furthermore, from 1880 to 1912, this debt steadily increased in its importance within the section from 25.2 per cent to 35.1 per cent. Two other noticeable features in the relationships

of the productive debt among the sections is the growth of its importance among the Western cities and its decline in the North Central section. In the former it grew from three-tenths of one per cent of the total section debt in 1880 to 30.2 per cent in 1890 and after a slight decline in 1904 it reached 36.7 per cent in 1912. On the contrary, the productive debt of the North Central cities fell from 28.5 per cent in 1880, the largest in any section in that year, to 17.2 per cent in 1904; and altho it had grown to 20.4 per cent by 1912, this was the smallest percentage found in any section in that year; while its per capita burden in 1912, higher than that of 1890 or 1904, was lower than that of 1880 and was the lowest found for these purposes in any section. This is the more noticeable because the population of the section was growing relatively more rapidly than that of any section but the Western.

The productive debt of the southern cities was but a small part of the total amount of their debt in any year. The burden of the South Atlantic cities was but little higher in 1912 than in 1880 and the amount had declined in relative importance within the section. But the burden of the South Central cities' productive debt grew from $3.28 in 1880 to $16.39 in 1912, from 5.9 per cent of the section's total debt to 22.7 per cent. This seems to be the real trend of such indebtedness in this section, but the very large amounts for refunding in the two earlier years makes such a generalization for the whole period

of doubtful value. Nevertheless, the increase from 1904 to 1912 from a per capita burden of $7,53 to one of $16.39 and the growth from 14.3 per cent to 22.7 per cent of the section's debt, surely measures the true tendency of the last period, for the refunding debt of these years was too small to affect seriously this conclusion.

The number of cities with such debts increased during each period,[13] and the percentage of these cities as compared to the total number of cities increased, as it did in most of the groups and sections from 1880 to 1912.[14]

Summary

In summary we should note that during the first decade (1880 to 1890) the total productive debt grew from 24.5 per cent of the total debt of all cities to 27.4 per cent, a tendency which prevailed in the largest cities (Group I) and in the two smaller groups (IV and V) and in all the sections except the North Central section. In the course of the next fourteen years this debt grew to be 29.4 per cent of the total debt for

13. Table: PERCENTAGE OF CITIES WITH PRODUCTIVE DEBTS

		Geographical Divisions					Population Groups				
Year	All cities	North Atlantic	South Atlantic	North Central	South Central	Western	I	II	III	IV	V
1912	81.5	83.5	72.2	79.3	82.6	88.2	100	88.8	86.8	78.9	78.0
1904	74.2	80.3	75.0	70.2	60.0	72.7	100	75.0	80.0	75.6	68.7
1890	72.7	77.7	62.5	70.0	75.0	57.1	100	100	82.3	70.0	65.9
1880	72.9	86.7	50.0	81.2	25.0	50.0	100	100	83.3	71.4	61.5

all cities; but this tendency was not general among the groups and sections, for increases were found only in Group I (over 500,000) and Group III (100,000 to 300,000) and in the North Atlantic and South Central sections. In all others there was a decline. In the last eight years there was an increase in this relationship of the productive debt to their total debt in every geographical section and in Groups II and IV, while in all but the cities of the middle size (Group III) it was greater than in 1880.[15]

The per capita burden of the productive debt declined in every group and in the North Atlantic and North Central sections during the first decade, while from 1890 to 1904 it increased over that of 1890 in all but Group II (300,000 to 500,000) and the South Atlantic cities, and was greater than that of 1880 for all cities, Group I (over 500,000) and Group IV (50,000 to 100,000) and the North Atlantic, South Central and Western sections. From 1904 to 1912 the burden of this class of debt increased in every group and section, and, with the exception of the North Central cities, was a greater burden than was that of 1880.

During the whole period the debts of the largest cities

14. From 1880 to 1890, however, this percentage declined for all cities and in Groups III and IV and in the North Atlantic and North Central sections; and altho the number of cities increased during each period thereafter it was not so large a percentage in the two later sections in 1912 as it was in 1880. But in all the other sections and in the three smaller groups (III, IV and V) the percentage of such cities was larger in 1912 than in 1880; it was always 100 per cent in Group I, but declined a little in Group II after 1890.

(Group I) and those of the North Atlantic section were predominant among the groups and sections and became an increasing part of the total debt for these purposes; altho the total debt and the population of the latter decreased in relation to those of the other sections. In the two newer sections this debt also increased not only in its relative importance within each section's total debt but in its relation to the total productive debt. The cities of the two larger groups (I and II) and of the North Atlantic, South Central and Western sections, seem to have had a growing share of their debt issued for these purposes.

Conclusion

In conclusion, whether one wishes or does not wish, to accept the assumption that the items here grouped together are practically comparable for all years - it seems certain that the importance of the items included in the productive debt of 1880 and 1890 increased in its relation to the total debt of all cities during this first decade, while there was a similar and more pronounced tendency from 1904 to 1912 in the importance of the items considered as making up the productive debt of those years. Furthermore, unless the productive items that may have been included in "miscellaneous" or "refunding old debt" in the earlier years were very large in comparison to similar items in the later years they could not offset what appears to

have been the general tendency for the ratio of productive debt to nonproductive debt to increase from 1880 to 1912 - a tendency which we can truly conclude has been general and rapid since 1904. This trend from 1904 to 1912 was marked in all but the North Atlantic section, in which the productive debt was already great in 1904; but among the population groups there seems to have been a small decline among the largest cities (Group I), the cities of middle size (Group III) and the smallest cities (Group V), and but a slight increase in the cities of Group IV (50,000 to 100,000). There had been a substantial increase in this relationship within Groups I and III, however, in the previous period.

Finally, in comparing the productive debts of 1880 with those of 1912 within the various groups and sections it appears that the only important instances in which the productive debt of 1912 was a larger part of the total debt than it was in 1880 are found in the two larger groups (I and II) and in the North Atlantic, South Central* and Western sections. On the other hand, there was a noticeable decline in this relation in the North Central cities as well as a small decline in the group composed of the medium sized cities(III). The per capita burden, however, was greater in all groups and in all but the North Central section in 1912 than it was in 1880.

15. This percentage in Group I, already large in 1904 (33.7 per cent), declined but .3 per cent.

* This statement ignores the large refunding debt in this section in 1880 and 1890.

Table 3: Indebtedness for Particular Purposes: All Cities.	Per capita burden				Number of cities in debt				Per cent each debt is of the total debt			
	1912	1904	1890	1880	1912	1904	1890	1880	1912	1904	1890	1880
Total Indebtedness	90.58	66.88	49.45	69.21	195	151	98	59	100	100	100	100
Total productive debt	28.62	19.63	13.81	16.99	159	112	72	43	31.6	29.4	27.4	24.5
Waterworks	16.22	11.75	11.95	14.48	145	101	65	39	17.9	17.6	24.2	20.9
[1]Improvement of waterways	4.15	---	1.85	1.81	21	---	23	22	4.6	--	3.7	2.6
Electric and gas	.52	.21	---	.68	23	15	--	1	.6	.3	--	1.0
[1]Cemeteries	.01	---	.01	.02	10	---	4	6	*	--	*	*
[1]All other	11.88	7.66	1.86	1.83	49	44			13.1	11.5	3.7	2.6
Nonproductive debts:												
Educational	10.76	6.98	.78	1.39	187	126	31	28	11.9	10.4	1.6	2.0
Recreation	5.36	5.09	3.80	4.98	123	70	28	19	5.9	7.6	7.7	7.2
Highways	10.20	7.18	3.76	9.07	168	113	41	31	11.2	10.7	7.6	12.9
Sewers(Sanitation)	5.96	4.05	2.52	2.30	161	95	46	30	6.6	6.1	5.1	3.5
Bridges	3.43	2.14	2.71	2.40	104	56	31	18	3.8	3.2	5.5	3.5
Buildings	2.34	2.31	2.45	2,74	86	73	48	36	2.6	3.4	5.0	4.0
Protection	1.25	.45	.14	.26	113	52	21	13	1.4	.7	.3	.4
War	---	---	1.43	3.31	---	---	17	24	--	--	2.9	4.8
Railroad and other aid	---	---	3.67	5.71	---	---	32	30	--	--	7.4	8.2
Funding	7.15	4.08	2.61	11.45	82	74	51	39	8.0	6.1	5.3	16.5
Refunding	3.81	4.98	7.71	6.36	85	75	52	30	4.2	7.4	15.6	9.2
Miscellaneous--all purposes	---	---	4.05	2.25	---	---	45	20	--	--	8.2	3.2
Combined and unreported-funded	4.25	3.12	---	---	123	82	--	--	4.7	4.7	--	--
Special assessment	3.14	2.18	----	---	41	20	--	--	3.5	3.3	--	--
Miscellaneous--general	3.99	4.41	---	---	123	75	--	--	4.4	6.6	--	--
Municipal service industries	.30	.26	---	---	18	8	--	--	.3	.4	--	--

[1]"All other" includes "improvements of waterways" and "cemeteries".
* The amount is too small to indicate on this table.

IV. INDEBTEDNESS FOR PARTICULAR PURPOSES.

The object of this discussion is to determine the changes in the purpose for which the funded and special assessment loans have been incurred. These changes will be considered in their relation to the so-called productive and nonproductive purposes, and with this end in view those purposes that have been considered productive will be first discussed, both for all cities, and, when advisable, for the different population groups and geographical sections.[16]

Of the titles applied to the various purposes in these reports some are evidently comparable for each year, (1880, 1890, 1904, 1912) others are comparable for two or three years while still others are not accurately comparable and some cannot be compared at all. Before taking up this discussion, therefore, the limitations of these possible comparisons should be noted.

The most important single item, either productive or nonproductive, in each of the four years here considered is that called "water-works" in the first three years, and "water-supply systems" in 1912. This purpose was the same in each year and hence the loans for this most important purpose can be compared for all years.

"Electric light and gas works" are really comparable for only 1904 and 1912, as these are the only years in which it appears to have been important or in which it appeared as a separate purpose. In the footnotes to the 1880 table, however, we find the amount of Philadelphia's gas debt, which I have separated from "miscellaneous" purposes under which it occurred.

The purposes included under "improvement of harbors, rivers, canals and water-power" in 1880 and 1890 were not separated in any way in 1904 and in 1912 were given only in a sub-table in the

16. The statistics upon which this part of the discussion are based have for the large part been obtained from the decennial reports on Wealth, Debt, and Taxation for 1880 and 1890 and from the "Statistics of cities having a population of over 30,000: 1904" and the "Financial Statistics of Cities having a population of over 30,000: 1912", with frequent reference to the annual reports covering this class of cities between 1904 and 1912. All of these are Census publications.

form of separate items. I have included docks in this purpose and have entitled the item "improvement of waterways," making it comparable for the first two years and for 1912; but as loans for these purposes appeared under the title of "all other" public service enterprises and investments in 1912 and without doubt under the similar title in 1904 I have included these sums under that title when discussing loans for all other productive purposes.

Likewise, the debts for cemeteries, comparable only in 1880, 1890 and in 1912, have been included under "all other" public service. In no year was this an important purpose.

In addition to "cemeteries" and "improvements" of 1880 and 1890, there is included as "all other productive purposes" the debts for "all other" municipal industries of 1904 and "all other" public service enterprises and investments of 1912. The items "issued for combined municipal industrial and general municipal purposes," 1904 and "incurred for municipal service enterprises," 1912, have not been included. Whether this is right or wrong, the items were relatively unimportant and would affect the general conclusion only in slight degree.*

A. DEBTS FOR PRODUCTIVE PURPOSES.

1. Water-works

The largest single debt[17] for all cities for all years has been for water-works, a relationship which has generally been true for both the geographical sections and the population groups. The amount of the debt for this purpose and the number of cities with such debts grew rapidly during each of the three periods -- the amount more than quadrupling from 1880 to 1912. The per cent of the total number of cities with water debts remained the same (66 per cent) in each of the first three years,[18]

* The reader should be warned again that in such terms as "miscellaneous" in 1880 and 1890, "combined and unreported" in 1912"funding"and "refunding," there may be included debts for some purposes so large that, did we know, they might make the debts for this purpose a different percentage of the total. But it seems that the main purpose of the thesis is not hindered by this source of error, or at the most, in but slight degree, as the attempt to trace these changes requires no more than approximate accuracy. On this assumption this source of error will be ignored in most cases in the following discussion.

but it grew to 74 per cent by 1912. The per capita burden, following the tendency noted with regard to the total debt, fell during the first decade from $14.48 to $11.95, altho its importance in relation to the total debt increased from 20.9 per cent to 24.2 per cent. But in 1904, in contrast to the total debt, there was again a slight decline amounting to twenty-five cents in the burden of this debt. By 1912, however, the average burden had grown to $16,22, nearly two dollars more than that of 1880. The relation of this debt to the value of the water property increased from 45 per cent in 1904 to 52 per cent in 1912.[19]

It thus appears that the amount of the debt for water-works, its per capita burden, the percentage of all cities with such debts, and the percentage of the total value of water properites for which the cities were in debt, were all greater in 1912 than in 1880. But in its relation to the total indebtedness the water debt declined in importance from 20.9 per cent in 1880 to 17.9 per cent in 1912. In 1890 this per cent rose to 24.2, but this was due to the relatively greater retrenchment which had taken place in the total debt as compared to that in the water debt during the previous decade or more. The water debt, however, either held over from the previous period or was more freely

17. Considering "all other" public service enterprises as composed of several items.
18. "Years" referring to the four years studied.
19. Figures are not available for these comparisons in earlier years. And this is the only purpose for which I have used this comparison as the estimates of the value of other properties do not seem accurate enuf to warrant it. See Financial Statistics of Cities: 1912, page 105.

issued than were other loans; probably both possibilities played their part, for water bonds which were doubtless freely issued in the years preceding the panic of 1873 could not have been largely paid off by 1890,[20] while we have seen that the increase in the number of cities with such debts from 39 to 65 was sufficient to make them the same percentage of the total number of cities as were the cities with water debts in 1880.[21]

In the course of each of the three periods the amount of the water debt increased not only for all cities, but with two exceptions, for the cities of all groups and sections. These exceptions were Group II and the South Atlantic section during the second period.[22] But we also find, as was the case with all

20. Because water bonds are long term bonds.
21. Some further possible proof of these assumptions is found in the fact that of the bonds outstanding in 1902 for cities over 8,000 only $197,704,441 were issued from 1880 to 1890. This is but approximately $40,000,000 more than the water debt alone of the cities of over 30,000 in 1904, whereas from 1870 to 1879, $451,909,717 had been issued for cities over 7,500, which was still outstanding in 1880.
22. This decline in Group II's debt in 1904 was both absolute and relative, the amount decreasing from $33,975,274 in 1890 to $16,933,532, and the per capita burden fell from $20.24 to $6.08 which was the lowest for any group in that year. The causes for this low burden in Group II are found in the changing personnel of the cities in the group and the decreased debt of some of the cities that were in the group in 1890 and 1904. St. Louis, Boston and Baltimore, cities with large water debts, grew into Group I, the debts of Detroit and Pittsburg declined, while of the six cities growing into Group II, San Francisco and New Orleans reported no debt and Milwaukee's was very small. The large decline in this group's per capita burden in 1904 is further accounted for by an increase of over a million in population. Of as much interest is the rapid increase in water debt for Group II after 1904, both in the amount and the burden, for while the group's population increased 23 per cent during this eight year period, this debt increased 358 per cent. Buffalo's

cities, that in both 1890 and 1904 the per capita burden of most groups and sections was lower than in 1880, and even by 1912 not all had surpassed their 1880 burden. Thus in 1890, while Group I and the South Central and Western sections reported increased burdens, there was a decline in all others. And altho most groups and sections had increased burdens in 1904 as compared to 1890, in only the South Central and Western sections and in Group I was it larger than it was in 1880, while in Group II and the South Atlantic cities both the amount of the debt and its burden had fallen. By 1912 the per capita burden had increased over 1904 in every group and section, but it was still smaller than that of 1880 in Groups II, III and V, and in the South Atlantic and North Central sections.

The number of cities in debt for water-works increased during each period in all groups and sections where such increases were possible, and even in 1890 when the burden had fallen, and again in 1904, the cities with such debts had so increased that they were a larger percent of the total number of cities in some groups and sections while in the others the percentage had

debt nearly trebled,, San Francisco accumulated a debt of nearly a million and a half and New Orleans of over eleven millions while Cincinnati's more than doubled. Of the cities growing into the group in this period, Los Angeles, Newark, and Minneapolis reported debts in 1912 of $26,226,400, $13,102,000, and $4,430,000, respectively. The two former had the largest water debts in Group II and were exceeded in amount only by New York and Philadelphia.

fallen but little. The number of cities increased so much after 1904 that in all but Groups II and III and the North Atlantic section the percentage in 1912 exceeded that in 1880, and with the exception of these and Group IV, it was larger than that of any other year, while in all but Group IV this percentage was greater than in 1904.

As was the case for all cities, the water debt was relatively less important in 1912 than in 1880 in all groups, and, excepting the South Central and Western sections, it was less important among the geographical divisions. In the former it had grown from 4.9 per cent of the section's debt to 21.8 per cent, and in the latter, from no debt at all to 27.7 per cent. In each of the last three years the water debt of the Western cities was a larger share of that section's total debt than was the water debt of any other section, altho in 1890 it had the lowest per capita burden of any section and not until 1912 did it have the largest. In each year but 1904 the cities of Group II had a larger share of their total debt invested in water-works than had any other group. Group III led in 1904. Group I had the second per capita burden in 1912 but it was a smaller part of its total debt than was that of any other group, and with the exception of 1890 it was always the least important in this regard.[23]

23. The fact that the smaller groups have the smaller per capita burden must not be confused with the idea that the cities in these classes that have such debts have a smaller debt per capita. This does not follow from such facts. What it does show aside

When we examine the part of the total water debt that each group and section has had we learn that here as in the case of the total debt the cities of Group I and those of the North Atlantic section have by far the largest part. Group I's water debt grew from 34.7 per cent of the total in 1880 to 50 per cent in 1904 and 47.2 per cent in 1912. With the single exception of 1880 it has each year had a larger part of the total water debt that it has had of total population or of total debt. In Groups II, III, and V, there was a tendency for the share of the water debt to decline, as did their share of total population and of total debt. The water debt of the North Atlantic section became relatively smaller during each period, declining from 74.4 per cent in 1880 to 64.5 per cent in 1912, a decline not quite so great as was that in its share of the population but greater than in its share of total debt. However, it had declined less than one per cent by 1904 and the remaining nine per cent occurred during the next eight years. This decline and slight declines in the South Atlantic and North Central sections were offset by gains from 3.5 per cent to 10.9 per cent of the total water debt in the Western cities and from 3.4 per cent to 6.5 per cent in the South Central cities, the only two sections that increased their

from the average per capita burden on all those of a group is that this type of debt is more widespread among cities of the larger groups than among the smaller, for it is obvious that if two groups have the same per capita burden but that all the cities in one group have such a debt while only a part of the cities in the other group have such a debt, the average burden for the cities that have such a debt would be greater in the latter group.

share of the total water debt during each period. Only the North Atlantic cities reported a larger share of the total water debt than of population in each year, altho the South Central section so reported in 1880 and 1890 and the Western section in 1912.

In 1904 the debt of all cities for water was 45 per cent of the reported value of the water property, but in 1912 it had grown to be 52 per cent of such value. The cities of Group I had a smaller percentage of debt for their water properties in both of these years and the increase during the period was less than that for all cities, growing from 44 per cent to 49 per cent.[24]

2. All other public service enterprises and investments.

Altho the total productive debt for all cities has apparently increased more rapidly than that for nonproductive purposes during the period from 1880 to 1912, the water debt, in each year the most important, has declined in relative importance and this

24. New York's water debt in 1904 was 60 per cent of the total water debt of the Group and 67 per cent in 1912, and in these years its debt grew from 56 to 62 per cent of the value of its water property. But even subtracting the figures for New York from those of Group I the same general tendency is found to prevail altho the increase was from the much smaller percentage of 25 per cent of the property value to 33 per cent. Chicago's water debt in 1912 was but 6 per cent of the reported value of its water property.

has been especially true since the first decade. Obviously, then, the increased importance of the productive debt must be sought in other objects. These other objects are the items electric and gas and "all other" productive debt, including "improvements of waterways" and the item "cemeteries" for 1880 and 1890. Passing over for the present the debt for electric and gas, a debt which was relatively unimportant for each year, the item "all other public service enterprises and investments" will be first considered. It was for this purpose that the largest relative increases in the total productive debt were made. This item, which did not appear in the tables until 1904, can be roughly compared for the whole period by combining "cemeteries" and "improvements of waterways" for 1880 and 1890 and considering them as comparable to the items of later years. While some items that were included under this title in 1904 and 1912 may have been placed under "miscellaneous" in the earlier years[26] it is doubtful if they were of sufficient importance to change the general results of this comparison. In 1880 the per capita debt for this purpose was $1.83 and it was 2.6 per cent of the total debt. During the following decade of general retrenchment altho this burden increased to but $1.86 it was 3.7 per cent of the total debt, and during the next fourteen years the increase was so rapid that in 1904 the per capita burden was $7.66 and the debt was 11.5 per cent of the total, while by 1912 the amount,

26. Or Railroads and other aid, as Cincinnati's Southern Railway.

which was more than twice that of 1904, was 13.1 per cent of the total debt, and the burden was $11.88.

The amount of this debt for all other productive purposes increased over the whole period for every population group and for every geographical section. The per capita burden increased in every population group but Group III whose burden was the same in 1880 that it was in 1912, while the per cent which this debt was of the total debt increased in all groups and in all but the North and South Central sections.

The most remarkable increase is found in the debt of the cities of Group I in which the burden grew from $3.98 in 1890 to $17.22 in 1904 and to $25.18 in 1912. In 1904 and 1912 this group's debt was more than 90 per cent of the total debt for this purpose as compared to a little under 75 per cent in 1880 and 1890. In the earlier years practically the whole amount of the debt included under this name in Group I, as in all cities, was that for "improvement of waterways," but in 1912, altho the "improvement" debt was a larger part of the Group's total debt than in earlier years it occurred in but two cities and was only 56 per cent of that for "all other" productive purposes. Other large items were the rapid transit loans of New York and Boston already mentioned, New York's debt of $78, 322,944, for toll bridges and $3,385,615 for markets, Baltimore's debt of $3,225,000, for conduits. New York's debt of $282,420,446, for all other productive enterprises was 89

per cent of Group I's debt for this purpose in 1912.

The only other group to noticeably increase its debt for all other productive purposes was Group II, in which the burden fell from $2.23 in 1880 to $.36 in 1904, after which it grew to $6.78 by 1912. The three largest items for the latter year were Cincinnati's debt of $17,432,000 for the Southern Railway property,[27] $2,925,000 for harbor improvements at Los Angeles and $1,900,000 for San Francisco's street railway. None of these cities reported large debts for "all other" municipal service enterprises in 1904. The cities of Groups IV and V also had a larger per capita burden for these purposes in 1912 than in 1880, altho it was smaller than in 1890 or 1904 as it was a smaller per cent of the total group debt than in those years.

Among the geographical sections we find that in the North Central section alone were both the burden of the debt and its relative importance among the items in the group debt smaller in 1912 than in 1880. This was partly due to a decline in the especially large debts which the cities in this section had incurred for waterway improvements previous to 1880, a debt distributed among ten of the sixteen cities in the section and amounting to $2.30 per capita. This debt had declined by 1890 to but $.77 per capita, and was distributed among but seven of the thirty cities of that year, while in 1912 it amounted to

27. This debt was included under "all other" debts for general purposes in 1904.

less than one cent per capita and was confined to one city. After 1890 other purposes included under this title became prominent and an increase is shown for both 1904 and 1912, so that in 1912 the per capita burden was but six cents smaller than in 1880 and it was nearly as important within the group.

Altho in three of the other four sections this debt increased both per capita and in its importance within the section from 1880 to 1912,[28] the increase was constant in the North Atlantic section alone. The twenty-one cities of this section with such debts in 1912 had debts that made the per capita burden of the section $21.72, $3.92 greater than that for water and amounting to 88 per cent of the total debt of all cities for this purpose. This last, however, was a decline of six per cent from 1904, at which time the per capita burden was six dollars less. These facts are accounted for by the increases in all sections after 1904. In both 1904 and 1912 the per capita debt of the North Atlantic cities was more than ten dollars greater than that of any other section and of more than eight per cent more importance in its relation to the total debt of the section.

In 1912 this class of productive debt was thus much more important than it was in 1880 in the North Atlantic, South Atlantic and Western sections, but of less importance in the North and South Central sections, altho in both these there had been an increase over 1904.

28. Burden of South Central increased one cent from 1880 to 1912 but fell from 1 per cent to .9 per cent of the section's debt.

Over the whole period the related purposes called "improvement of waterways" were the most important of the items included under all other productive purposes.* This is the only item included therein that can be discussed for more than one of the years* but there are data regarding it for 1880, 1890 and 1912. The per capita burden grew from $1.81 in 1880 and $1.85 in 1890 to $4.15 in 1912 and from 2.6 per cent and 3.7 per cent of the total debt to 4.6 per cent. The amount increased from $14,617,074 in 1880 to $121,824,130 in 1912, but the number of cities was practically the same in each of these years: 22 in 1880, 23 in 1890 and 21 in 1912 - 34 per cent of all cities in 1880 and 11 per cent in 1912. Because of its nature it is evident that this class of indebtedness will always be confined to a few cities, and especially to the very large cities that have excellent rivers or harbors. The largest share of this debt in each of the years was confined to Group I and to two cities in that Group in each year.[29] In 1880 the "improvement" debt of this group was 72.7 per cent of the total for the purpose, and four per cent of the Group's total debt; after slight increases in the amount and per cent of the debt of the total debt and an increase of 2.9 per cent in its importance within the Group by 1890, we find that by 1912 the debt had grown to $114,534,550, which was 94 per cent of the total "improvement" debt of that year, the per capita burden in

* The loans for cemeteries were so unimportant that they will not be discussed.

29. New York in each year, Chicago in 1880 and 1890 and Baltimore in 1912.

the Group was $9.08 and altho the debt of but two cities it amounted to 7 per cent of the total group debt. 65 per cent of the 1880 debt of the cities of this class consisted of New York city's debt for docks and ferries and the remainder was for the same purpose in Baltimore. In 1890 New York's debt was 84 per cent of the total Group debt and by 1912 it had become 94 per cent.[30]

In the other groups this purpose was almost negligible in 1912, altho it was of some importance in 1880 and 1890. It was most important in Group II, but fell from 2.7 per cent of its total debt in 1880 to 2 per cent in 1890 and to 1.1 per cent in 1912, and from 16 per cent of the total improvement debt in 1880 to 10.6 per cent in 1890 and 2.5 per cent in 1912; while the per capita burden likewise declined with each period. The importance of the debt of Group III declined steadily from .9 per cent of the Group debt in 1880 to .6 per cent in 1912, and altho the debts of Groups IV and V increased in relative importance during the first decade they had declined to less than one per cent of both their total group debts and the total improvement debt by 1912.

Since 1880 this type of indebtedness has declined in relative importance among the four smaller groups, while it has become increasingly important in Group I. But the growing importance of this debt in Groups IV and V, as well as in Group I, during

30. New York's "improvement" debt was 47 per cent of that for all cities in 1880, 63 per cent in 1890 and 88 per cent in 1912.

the first decade accounts for the growing importance of their productive debt during this period, while its decline in Groups II and III accountsfor the decline in the importance of their productive debt. In 1912 it was a factor in enlarging the productive debt of Group I alone.

As would be expected from the location of New York the North Atlantic section had the largest share of the "improvement" debt in each of the three years, 61 per cent in 1880, 69.5 per cent in 1890 and 88.8 per cent in 1912. But in each of the earlier years it was surpassed in per capita burden by other sections. Thus in 1880 its burden of $1.84 was second to the North Central burden of $2.30 and was barely ahead of the South Atlantic burden of $1.71, while in 1890 with a burden of $2.43 it was second to the South Atlantic burden of $4.78. In 1912, however, its burden had arisen to $7.63 while that of the South Atlantic section had fallen to $4.06. During the whole period the North Atlantic, South Atlantic and Western sections increased their burdens materially. This was especially true of the North Atlantic and Western debts from 1890 to 1912. The burden in the North Central section fell from $2.30 in 1880 to $.77 in 1890 and finally to less than one cent in 1912, while that of the South Central section fell from $.67 to $.17. The relation of this debt to the section's total debt was greater in 1912 than in 1880 in the North and South Atlantic and the Western sections, while falling a little in the South Central and more than 5 per cent in the North Central. Hence, we must conclude

that this item, confined to ten or less cities in each section, and generally to five or less, was one important factor in increasing the relative productive debt in the North Atlantic and Western sections, in keeping it from falling more in the South Atlantic cities and in its decline in the North Central section.

Of the remaining sums included in all other productive debts in later years, there are no others included in 1880 and 1890[31] and none of the purposes included therein in 1904 are separable. But of the total amount in 1912 88.3 per cent was confined to the North Atlantic section whose per capita burden amounted to $14.08 as compared to that of the North Central section whose burden of $2.22 was second. In the North Atlantic section it amounted to 11.4 per cent of the section's total debt, in the South Atlantic to 2.6 per cent, the South Central to 4.5 per cent and in the South Central and Western to .7 per cent and 1.2 per cent. All of these are additions to the kinds of productive debts we have included for 1880 and 1890.

3. Gas and electric plants.

With the single exception of Philadelphia's debt for its plant in 1880 there are no figures of indebtedness in the first two years for electric and gas plants. But that debt was so large, $5,449,500, that even in 1912 the per capita burden for

31. Except the loans for cemeteries which are of no practical importance.

both. all cities and for Group I was not so great as in the earlier year , altho greater than the same in 1904.

This is one type of indebtedness in which the cities of Group I have not recently had even their proportionate share, for in 1904 but one city had such a debt which was 18.9 per cent of the total debt for this purpose while in 1912 the debt of two cities was but 7 per cent of the total. The greatest burden and the largest per cent of the total debt for these purposes were found in 1904 in Group V. Five cities had such a debt which amounted to 34.6 per cent of the total. In 1912 six cities of Group III had 35.7 per cent and those of Group I had the smallest share of all.

Among the geographical sections the amount of the debt was more evenly distributed in 1904 than in 1912, but in neither year was there any relation to the population. Thus while four cities of the North Atlantic section had 57.4 per cent of the total debt in 1904, they had but 12.5 per cent in 1912, whereas two cities in the Western section had but 1.2 per cent of the total in 1904, four cities in 1912 had 61.1 per cent,[32] of the total, 4.9 per cent of the group debt.

The burden for all cities grew from $.21 in 1904 to $.52 in 1912 and the number of cities from 15 to 23, but even in 1912 the amount of the debt was less than one per cent of the total. So that altho this debt has grown in extensiveness and amount it is still but a small share of the total indebtedness of

32. Largely due to San Francisco's street railway debt.

all cities. Its growth, however, since 1880 has increased the importance of the productive debt of all but Group I and of all sections but the North Atlantic.

B. DEBTS FOR NONPRODUCTIVE PURPOSES.

Before considering the loans for nonproductive purposes it seems necessary to discuss the items that have been compared.

In the 1880 and 1890 reports we find a column devoted to "schools and libraries", while in 1904 and 1912 this is separated into debts for schools and debts for "libraries, art galleries and museums". For purposes of comparison these are combined and compared with the one figure for 1880 and 1890. The total amount for the last purpose was relatively small so that the inclusion of art galleries and museums which apparently were not included in the earlier year will make little difference in the comparison.

The purpose called "sewers" consists of debts for "sewers" in 1880 and 1890 and 1904 and that called "sewers and sewage disposal" in 1912. Altho these debts are not always accurately separated from those for general street improvements[33] there seems no reason to believe that they are not comparable for all years.

Under "bridges" are included the debts for the purpose so named in 1880 and 1890 and that called "bridges and the abolition of grade crossings" in 1904 and 1912. I am assured by Mr. Grogan[34] that these items are comparable for all years. But it may be considered unfortunate that we have no way of comparing the loans for the comparatively new purpose the abolition of grade crossings.

The purpose called "highways" is as nearly comparable for all years as a process of elimination can make it. It includes the

[33]Statistics of cities, 1906, page 69.
[34]Starke M. Grogan, chief statistician for statistics of cities, United States Census, from whom I have received considerable aid in the interpretation of the Census reports.

item "streets" in 1880 and 1890, the item "general street improvements" of 1904, "other highway purposes" 1912, and "paving" for 1904 and 1912. The separate purpose called "bridges" is found in each year while that called "streets" in 1880 and 1890 seems to have been succeeded by the two items named for the later years.

"Public buildings" includes the purpose of that title in 1880 and 1890, "municipal buildings" of 1904 and "general government buildings" of 1912. While some buildings that were later placed under special heads may have been included in the earlier years it seems probable that the great bulk of buildings included under these heads in all years were of the same general nature, and therefore comparable.

"Recreation" is composed of what are called debts for "parks and public places" in 1880 and 1890 and debts for "parks and gardens" in 1904 and 1912. There seems no reason to believe that these debts are not practically comparable for all years, and I am so assured by Mr. Grogan.

"Protection" consists of debts for police and fire departments. In 1880 and 1890 it was made up of debts for fire departments alone while in the last two years an item appeared called "police and fire."

The terms "funding floating debt" of 1880 and 1890, "issued for funding" of 1904 and "incurred for funding" in 1912, appear to be comparable for all years. It is defined in 1904 as including "all bonds issued for taking up unpaid claims, judgments, and outstanding warrants and orders," We are warned, however, here as in later years, that "undoubtedly it is applied by some cities to bonds issued for refunding other bonds" [35] and hence may contain sums that were originally issued for other purposes.[36]

The debts for "refunding" do not truly indicate the amount of such debt. Thus the later reports state that wherever possible such debts were placed under the original purpose of issue, while Mr. Grogan states that that was done in the earlier years. Consequently, altho the purpose is the same the sums are not comparable and the resulting figures do not truly indicate the growth or decline in this purpose.

Debts for "railroads and other aid" of private corporations were not separately tabulated after 1890,[37] and doubtless even

35. Statistics of Cities, 1904, page 27.
36. That this was also true in 1880 seems probable from the following list of "original purposes" of this class of bonds: for streets nearly 12 per cent of the amount for refunding; railroad and other aid, 10 per cent; refunding old debt, 10 per cent; schools and libraries, 2 per cent; war expenses, 4 per cent; sewers, 3 per cent; bridges, 3 per cent; public buildings, 4 per cent and improvement of harbors, 2½ per cent. (Census 1880, p.290)
37. Some figures are given in Statistics of Cities, 1904, p. 77.

in the earlier years much of this sort of debt was included in the refunding debt of many cities, so that the figures of the earlier years simply indicate the declining importance of this debt.

"War expense" is another item found only in 1880 and 1890. It refers to debts for the Civil War and appears to have been paid before 1904.[38]

"Issued for combined and unreported purposes" is a term that has been used since 1907 by the Census. After 1906 such items as "local improvements," "general improvements" and "general street improvements" appearing in 1904 were classified under specific purposes in so far as possible and the remainder were put under this head and separated according as they were funded or special assessment.[39] While not entirely comparable the purpose called "general improvements" and that called "local improvements" in 1904 are probably comparable to these two items in total, and perhaps even to the separate items "funded" and "special assessment" respectively.

The debts for "all other" issued for general municipal purposes in 1904 and for "miscellaneous" incurred for general purposes in 1912 are practically comparable for the two years apparently consisting of items that were not considered to be of enough importance to separately tabulate. From 1911 to 1907 these were separately tabulated, but this was discontinued in 1912. In comparing these items I have included "charities, hospitals and corrections" for 1912, as this item was not separated in 1904.

The purpose called "miscellaneous" in 1890, here called "miscellaneous for all purposes," appears to include what in 1912 would have been included under "all other" public service enterprises; "miscellaneous" less than any new items added since those years to the table, and the purposes called "combined and unreported." This item is of use simply in comparing it with the total for the purposes it perhaps included in those years with the same items of the later years. A purpose, however, which is better met by comparing only items that can be called comparable for a part of the time.

From this analysis it appears that the various purposes are by no means accurately comparable for all years and it is also true that many errors appear in the items for particular years. But with all these probable sources of error it appears

38. Mr. Grogan states in a personal letter that it was all paid by 1896.

39. The special assessment loans of our cities are not well segregated as to purpose. Thus in 1907, $78,498,613 or 86.5 per cent and in 1912, $92,075,308, or 62.2 per cent of the total was included under combined and unreported purposes. There seems to be an improvement. Although this is the special assessment debt that is unaccounted for in 1912 it is so large a part of the total that its distribution among the sections and groups is of

that our general purpose can be well served in some instances and at least probable tendencies can be ascertained in others.

1. Educational

Perhaps the most remarkable growth in the amount of debt reported for any single purpose is found in that for educational purposes. This debt for all cities in 1880 amounted to but $1.39 per capita, and by 1890 it had declined to $.78, the actual amount declining nearly a million dollars. In both these years the debt for education was in the thirteenth place from the standpoint of relative importance. During the next fourteen years, however, the amount of the debt grew from $10,235,997 to $150,244,466, while it more than doubled during the following eight years. The per capita burden had reached $6.98 by 1904 and $10.76 by 1912. In both these years the amount of the debt was exceeded only by that for water-works and for "all other" productive enterprises. The per capita burden of 1912 was 774 per cent greater than it was in 1880.

The extensiveness of this type of debt also increased. In 1880 but 28 out of 59 cities (47 per cent) had such debts and in 1890 only 31 of 99, but in 1904 there were 126 out of 151 and in 1912 but eight of 195 cities were reported free from debts for this purpose.[40]

interest. The burden of Western sections was $10.95, the South Atlantic $3.16, the North Atlantic $2.72, North Central $2.36 and South Atlantic $.13. Group III had a burden of $6.02; Group I, $3.37; Group IV, $1.88; Group II, $.88 and Group V, $.77.

40. In the last eight years the cities with debts for schools increased from 125 to 184 and those with debts for libraries, art galleries and museums from 25 to 41.

Each population group reported a notable increase in its educational debt during the fourteen years following 1890. The importance of this class of debt within the groups in 1890 ranged from .4 per cent in Group II to 2.2 per cent in Group I and it was 1.6 per cent of the debt of all cities. In 1904 this relationship was remarkably uniform within the groups, ranging from 8.8 per cent of the debt of Group III to 11.7 per cent in GroupIV. By 1912, however, it varied from 10.7 per cent in Group I to 17.2 per cent in Group V. But the greatest per capita burden for each year was found in Group I, although only in the two earlier years was its educational debt a larger share of the Group's total debt than was that of any other group. In 1912 the larger the group the smaller was the share which its educational debt was of the total group debt; but with the exception of Group IV whose per capita burden was larger than that of Group III, the reverse was true of the per capita burden.

In every group sometime between 1890 and 1904 rapid increases began to be made in the educational debt while an increase over the per capita burden in 1904 is likewise found in every group in 1912.

During the whole period the debt of the western cities was a larger share of its total debt than was that of any other section, altho their per capita burden was highest only in 1880 when San Francisco and Oakland comprised the section. In 1890 this section's educational debt, that of but three of seven cities in the section, was 9.4 per cent of its total debt, while the next

highest per centage (2.2 per cent) is found in the North Central cities in which eight out of sixteen had such debts. But by 1904 the importance of the educational debt within the section was greater in both the North Central and North Atlantic sections and in 1912 was not far behind that of the Western cities.

After 1880 the North Atlantic cities had in each year the largest per capita burden for education and the Western cities were second. In 1912 all of the North Central and Western cities and 78 of the 79 North Atlantic cities had such debts. Perhaps the most noticeable feature of the educational debt is its comparative unimportance among the southern cities in the first three periods. Not only was the amount of the debt small but so was the number of cities with such debts. Thus, in the South Atlantic section there were but two cities reporting such debts in 1880 and 1890 and but three in 1904, while in the states of the South Central section two cities reported such debts in 1880, three in 1890 and nine in 1904. By 1912, however, thirteen of the eighteen cities in the former section and twenty-one of the twenty-three in the latter were in debt for educational purposes. But in no year, was the educational debt of these sections of equal relative importance with their share of the total debt or of the total population. Neither does this appear to have been due to a different plan in the building of educational plants, but rather to the lack of them, for although there are no available figures for the earlier years we find that in

1904 the per capita value of the school property of all cities was $14.47, but that it was only $9.26 in the South Atlantic sections and $5.37 in the South Central.[41] By 1912 the per capita value of the property in the South Atlantic section was $14.01 and in the South Central it was $13.04 as compared to $20.68 for all cities. In this year the average burden of the educational debt of the South Atlantic cities was still much smaller than that of any other section and was but 3.7 per cent of its total debt; but in the South Central cities the debt amounting to $5.70 per capita, larger than that of the North Central or South Atlantic sections, amounted to 7.9 per cent of its total debt.

2. Recreation

The per capita burden of the loans for recreation fell more than one dollar during the first decade, but by 1904 it had reached $5.09 per capita, eleven cents more than that for 1880; by 1912 it had reached $5.36. Despite the decline in the first decade the recreation debt of 1890 was 7.7 per cent of the total debt as compared to 7.2 per cent in 1880 and 7.6 per cent in 1904, while with the largest burden of any year, it was but 5.9 per cent of the total debt in 1912.

In 1880 the three cities in Group I had 83.2 per cent of the total debt for this purpose, which amounted to 12.6 per cent of

41. The value of the South Atlantic properties was greatly enlarged by the large debts of Baltimore and Washington; four of the eighteen cities reported no such property.

their total debt, while their per capita burden ($10.62) was larger than that of any other Group in any year. In fact, in each year this group had by far the largest per capita burden of debt for this purpose.

The per capita burden of all but Group I, that is, of the four smaller groups, was greater in 1912 than in 1880 and for the three smaller groups, was the greatest of any year.

The number of all cities with such debts was 33 per cent of the total in 1880, 49 per cent in 1890, 70 per cent in 1904, and 63 per cent in 1912. Every city of Group I reported such a debt in 1880 and in 1912, while but one was free in 1890 and 1904.

All the cities in Group II reported such a debt in each year.[42] The gains in this regard were in the three smaller groups but even in 1912 only 66 per cent of the cities of Group IV and less than half those of Group V had such debts.

The per capita burden of all sections but the North Atlantic was greater in 1912 than in 1880, and with the exception of the Western cities, the same was true of the importance of the debt within each section. But in each year, the North Atlantic cities had the largest share of the debt, 90.2 per cent in 1880, 87.2 per cent in 1890 and 80.1 per cent in 1904, during the next period there were large increases in the other sections and by 1912 it had but 66.1 per cent of the recreation debt. This debt has been most important among the cities of the North Atlantic, North Central and Western sections, being 8 per cent, 5.9 per cent

42. Excepting Washington which reported debts for few specific purposes.

and 9.8 per cent in 1880 and 5.9 per cent, 8 per cent and 6.4 per cent in 1912. In the two southern sections the debt of 1912 was more important than in any other year, it amounted, however, to but little over 2 per cent of either section's total debt.

3. Highways.

The debt for highways was third in importance in 1880 and fourth in 1912; the per capita burden for this purpose was $9.07 in 1880 and $10.20 in 1912; but this debt was 12.9 per cent of the total debt in 1880 and but 11.2 per cent in 1912. Thirty-one of the 59 cities in 1880 were in debt for this purpose and 168 of the 195 in 1912. It appears from this that the average per capita loans for the cities actually in debt for this purpose in 1880 must have been considerably larger than in 1912 when it was a much more widespread purpose of indebtedness. A general fall in the per capita burden during the first decade is here very noticeable, declining from $9.07 to $3.76, and even greater declines took place in Groups I, II, and III; but in Groups IV and V the burdens increased in this period, as did the importance of these loans in relation to the total group debt. The actual amount of the debt declined in the three larger groups, falling more than one-half in Group I. By 1904, however, the burden of Group I was greater than in 1880 and in 1912 it was more than twice that of any other but Group V.

But although the per capita burden of Group I was over one-third greater in 1912 than in 1880 it was but 11.9 per cent of

its total group debt as compared to 12.4 per cent in 1880. It was a little greater than in 1904 however and twice that of 1890. The debt of Group II declined each year in per capita burden falling from $18.10 in 1880 to $6.35 in 1912, and from 25.9 per cent of the total highway debt to 7.5 per cent, while the importance within the group fell from 22.3 per cent in 1880, the highest of any group in any year,[43] to 7.9 per cent in 1912. After a fall from $9.52 to $3.21 during the first decade the burden in Group III grew to $5.92 in 1912 when this debt was 9.2 per cent of its total debt as compared to 14.9 per cent in 1880. In Groups IV and V the per capita burden increased each year from $1.97 to $5.64 and from $.83 to $7.79 and in importance within the group from 4.8 per cent to 10.7 per cent and from 1.8 per cent to 16.9 per cent.

Fourteen out of thirty North Atlantic cities had 92.2 per cent of the total highway debt in 1880, and three of its cities in Groups I and II had $50,923,591 of the total, $67,376,891. This was a larger share than the North Atlantic cities have had of any debt in any year, with the exceptions of"war"and"gas"in the same year, and with the exception of 1890, when the amount had fallen by half, it had a larger per capita burden than had any other section; but although its per capita debt, which had been lower in 1890 and 1904 than in 1880, was the largest of any year in 1912 the debt was a smaller part of the section's total

43. Due to Boston's debt of nearly nineteen millions.

debt than it had been in either 1880 or 1904. In every other section the debt of 1912 was not only larger per capita in 1912 than in any other year, but the debt was also a larger share of the total sectional debt than previously.

The growth in the extent of this debt has been very noticeable among all groups and sections: from half or less of all the cities in each of the smaller Groups (IV and V) in 1880 to 50 out of 67 in Group IV and 70 of 82 in Group V in 1912; from 75 per cent of the cities of Group III to 32 out of 38. In Group I all the cities had such debts in 1880 as did two of the three in Group II, while in 1912 eight of the nine in each were so burdened. There was a percentage loss in the number of cities in every group during the first decade, although in the two smaller groups a numerical increase. These were practically made up and 1880 was even surpassed in the smaller groups by 1904.

In the North Central section alone was there a percentage decline in extensiveness during the whole period, from 75 per cent of its cities in 1880 to 74 per cent in 1912. In all others it had increased. Declines in all but the Western section during the first decade were made up by 1904 in all but the North Central cities.

4. Sewers.

The amount of the debt for "sewers" and its per capita burden increased during each period, and grew in each year in relation to the total debt of all cities from 3.5 per cent in 1880 to 6.6 per cent in 1912. In every group and section the burden,

amount and share that this debt was of the total group or section debt was greater in 1912 than in 1880. In no year was Group I's share so large as was its share of total debt, and not until the last two years was it larger than the Group's share of population. So with the North Atlantic cities, in 1890 alone was their share of the sewer debt greater than their share of total debt, and it was greater than the section's share of total population in only 1904 and 1890. The burden of the debt of Groups III and V increased with each year, that of Group II declined through 1904 and that of Group I during the first decade. In marked contrast to most items there was no year in which this burden in Group I was larger than that of the others - in 1880 it was the fourth and in 1890 last, third in 1904 and in 1912. The cities of both Groups I and V had very low burdens in 1880 and 1890.

Other noticeable features of this debt are the increase in its relative importance in the South Central and western sections from 1.8 per cent to 14.8 per cent in the former, and from 3.6 per cent to 6.5 per cent in the latter. The debt of the North Atlantic cities for this purpose fell from 57.9 per cent of the total sewer debt in 1880 to 40.9 per cent in 1912, although growing from 2.7 per cent to 4.1 per cent of that section's total debt. The debt of the South Atlantic cities also increased from 3.4 per cent of its total debt to 14.1 per cent and from 1.8 per cent to 14.8 per cent of that of the South Central cities. In these two cases it made the largest part of this increase dur-

ing the last eight years and thus the figures mark the true tendency for that period at least.[44] In 1890 alone did the North Atlantic cities have the largest per capita burden for this purpose, while in 1912 their burden was the lowest found in any section.

The extent of this debt grew from 30 out of 59 cities in 1880 to 161 out of 195 cities in 1912, although there was a slight decline in the percentage relationship during the first decade. Among the geographical sections the number of cities with such debts constantly increased and in each case was a much larger percentage of the total number of cities in 1912 than in 1880 or 1890. The same is practically true for the population groups, with the exception of Group II in which it declined by one city and of Group I in which it was 100 per cent in each year.

5. Bridges.

The per capita debt for bridges increased during the first decade and decreased during the second, but by 1912 it surpassed that of all other years. With the exception of 1912 the cities of Group I had a larger share of this debt than they had of population or of total debt, and in 1912 it exceeded their share of population, while in every year it had the largest per capita burden which, with the exception of 1912, far exceeded that of any other group. In 1912 its burden of $4.72, lower

44. The large debt for refunding affects the earlier figures.

than that of 1880 or 1890, was closely followed by Group II, $4.30, and Group III, $3.29. Group V's burden had declined more than half by 1912. This debt was a larger part of the total debt of all cities in 1912 than in 1880 and although it was more important in the other groups, it was less important in Groups I and V.

Every geographical section had a larger burden in 1912 than in 1880 and with the exception of the North Atlantic cities the debt for this purpose in 1912 was a larger share of the total debt of each section than in any other year. In every year the North Atlantic burden was the largest found in any section, increasing from $3.63 in 1880, nearly three dollars greater than that of any other section, to $4.61, more than a dollar greater than the next section.

As can be seen from the per capita burdens, the highest of which ($4.61) was that of the North Atlantic section in 1912, this purpose was never very important. Its highest percentage of the debt for all cities was 5.5 per cent in 1890. This had fallen to 3.2 per cent by 1904 and was but 3.8 per cent in 1912.

But eighteen of the fifty-nine cities in 1880 had such debts, as compared to one hundred and four out of one hundred and ninety-five in 1912. The smallest share of cities with such debts were as usual, in the two smaller groups.

6. Buildings.

The total indebtedness for public buildings was greatest in 1880.

It declined during the first two periods from $2.74 in 1880 to $2.31 in 1904; by 1912 it was $2.34. The relative extensiveness of the debt also declined - thus in 1880, 61 per cent and in 1890, 73 per cent of all cities had such debts while in 1904 only 32 per cent had them and in 1912 but 44 per cent. One half the cities of Group V had such debts in 1880 and but 23 out of 82 in 1912.

In 1904 and 1912 the per capita burden of the North Atlantic section was greater than that of any other while it is the only section whose per capita burden was not smaller in 1912 than in 1880, although even its burden was lower than in 1890 or 1904. The greatest burden of any section in any year is found in the South Atlantic cities ($5.09) for 1880, and the second in the Western cities ($3.80) for the same year. In only the South Central and Western sections was there an increase in extensiveness over the whole period while in every section the importance of the debt within the section declined. The Western section in the first three years and the North Atlantic in 1890 are the only sections in which this debt exceeded 5 per cent of any section's total debt, and in no year did it reach more than 5 per cent for all cities, but ranged from 5 per cent in 1890 to 2.6 per cent in 1912.

7. Protection

Although it amounted to but 1.4 per cent of the total debt in 1912 the debt for protection had increased very rapidly as compared to its importance in 1904, when it was but .7 per cent

of the total debt, and in 1880 when it was but .4 per cent. The greatest per capita burden in 1880, and 1904 was found in Group I, but during the first decade it declined in this group from $.48 to $.17 - in 1904 it was $.60 and in 1912 $1.66 and had grown from .6 per cent of the group's debt in 1880 to 1.3 per cent in 1912. The burden of this debt in Group II grew from $.52 in 1904 to $2.02, in 1912, (2.5 per cent of its total debt). There were large increases in each group during the last eight years - over 50 per cent in all but Group III.

With the exception of 1912 the North Atlantic cities had the largest per capita burden. In that year their debt of $1.68 - nearly three times that of 1904 - was exceeded only by the debt of the Western cities, amounting to $2.19 per capita (2.8 per cent of their total debt), an increase from $.14 in 1904.[45] The two southern and the western sections had no such debt in 1880 and the Western had none in 1890.

The most notable feature is the increase in the extensiveness of this debt from less than 25 per cent of all cities (thirteen) in 1880 to practically 33 per cent in 1904 and to 58 per cent in 1912. There were but two purposes for which a smaller number of cities were in debt in 1880 than for this, in 1912 there were ten. There was an increase in this extensiveness in all

45. Its largest debt of 1912 was due to San Francisco's debt of $4,520,000, ($10.43 per capita) second only to New York's. San Francisco reported no such debt until 1908 when it had one of $2,450,000, increasing to $4,200,000 by 1910 and to its present figure in 1912.

groups and sections. It is especially noticeable in the North Atlantic section, but seven of whose thirty cities had a fire protection debt in 1880, as compared to sixty out of seventy-nine cities with debts for fire or police protection in 1912.

8. War.

The debt for war expenses was purely an heritage from the Civil War and declined in all respects during the first decade, while all such were paid by 1896, or at least had become non-interest bearing. Twenty-four cities had such debts in 1880 and seventeen in 1890. Group I had 71.6 per cent of the total in 1880 and 78.9 per cent in 1890. In the former year this debt amounted to 7.2 per cent of the total debt of Group I and in 1890 to 5.7 per cent, while in the other groups in 1880 it amounted to from 2.1 per cent in Group III to 3.4 per cent in Group II, but by 1890 the importance had declined in all groups and in only Groups I and II was it more than 1 per cent of the group debt.[46] The per capita burden of Group I was the greatest in each year, being over twice that of Group II which was second. All groups had a burden of more than one dollar in 1880 but in 1890 it was under thirty-five cents in the three lower groups.

The Western section reported no such debt and but one city in the South Atlantic and South Central sections reported in 1880,

46. I am unable to explain, however, why there were three cities in Group I with such debt in 1890 and but two in 1880, and in Group IV the number grew from 5 to 7. Possibly this debt was better segregated in 1890.

while in 1890 there were none in the South Central and two in the South Atlantic. Twenty cities of the North Atlantic section had such debts in 1880 and their debt was 95.3 per cent of the total debt for war. By 1890 this number had diminished to ten cities, which had 78.9 per cent of the total. To this purpose was assigned 6.3 per cent of the North Atlantic debt in 1880 and 3.5 in 1890. In the South Atlantic its importance increased from 3.4 per cent in 1880 to 4.5 per cent in 1890, and from less than .1 per cent to 1 per cent in the North Central cities. The highest per capita burden was found in the North Atlantic section in 1880, $5.27, but this fell to $2.13 in 1890. The South Atlantic burden was $2.22 in 1880 and $3.31 in 1890.

9. Railroads and Other Aid

"Railroads and other aid" was the item fifth in importance in 1880 and sixth in 1890. It is not mentioned separately in the two later years. In 1880 this debt amounted to $46,021,634 and was 8.2 per cent of the total debt of that year. The per capita burden was $5.71. By 1890 the amount had grown a little more than two millions, but the burden had fallen to $3.67 and, despite the decline in the per capita burden of the total debt of that year, was but 7.4 per cent of the total debt. In the earlier year thirty cities had such debts and in the latter thirty-two. The legislation of the seventies against such aid was evidently having its effect. Although no mention was made of this debt in 1904 or 1912 in 1907 there was a debt of $33,494,810 for "aid to railroads"[47]

47. Statistics of Cities, 1907, page 77.

of which a little over twenty-four millions was found in the cities of Groups I and II, by 1911 this amount had been reduced to $17,341,477, thirty cities, and a per capita burden of less than one dollar. This debt of later years is no doubt in large measure a survival from the earlier period.[48]

Among the population groups it should be noted that the railroad debt of the larger cities (Group I) was very unimportant in both 1880 and 1890 being surpassed in amount by every other group, and in each year the debt was less than 1 per cent of the Group's total debt and was confined to one city in 1880 and to two in 1890. In both 1880 and 1890 Group III had the largest share - 55.7 per cent in 1880 and 46.4 per cent in 1890.

On turning to the geographical sections we find some interesting facts. In both years the cities of the North Central section had the largest share of total debt, 47 per cent in 1880 and 41 per cent in 1890; in the former it was followed by the North Atlantic section with 34 per cent of the total and in the latter by the South Atlantic with 30 per cent.[49] In each year the debt of the North Atlantic cities was a smaller part of their total debt than was that of any other section. In each section but the South Atlantic the relative importance of the railroad debt declined considerably during the first decade, but in each of these years this debt was a larger part of the total railroad debt

48. In 1880 Cincinnati had nearly eighteen millions for this and in 1890 nearly seventeen, but in 1911 this was considered as public service and hence not a part of this sum above, whereas in 1907 it was considered as miscellaneous and so appears above. So that in reality the amount of this debt probably declined little if any during the last eight years.

49. Due to increases of Baltimore by over nine millions and of over eight hundred thousand by Norfolk.

than was the population or total debt of the South Atlantic, North Central or South Central sections. The largest number of cities, however, with such debts were situated in the North Atlantic section, thirteen in each year, confined with one exception in 1880 and three in 1890 to the three smaller groups, and the second number were found in the North Central, ten in 1880 confined with two exceptions to the three lower groups, and all were in the three lower groups in 1890.

The railroad debt was relatively much more important in the North Central section than in any other in 1880, and following in importance were the debts of the North Atlantic, South Central, South Atlantic and Western sections in the order named and in 1890 by South Atlantic, North Atlantic, South Central and Western. Within the sections the railroad debt was the most important of that for any purpose in the North Central in 1880 and in the South Atlantic in 1890, while in both years it was less important in the North Atlantic than in any other section.

But of as much interest is the fact that in neither year did the cities of Group I have an appreciable share of this debt, while they had 47 per cent of the total debt for all purposes in 1880 and 40 per cent in 1890 they had but 2.5 per cent of the railroad debt in 1880 and 3.7 per cent in 1890; on the other hand the cities of Group III, with 22.5 per cent of the total debt in 1880 and 21.8 per cent in 1890 had 46.4 and 55.7 per cent of the railroad debt. The cities of the three smaller groups had 37.5 per cent of the total debt in 1880 and 40.9 in 1890 but they

had 66.7 per cent of the railroad debt in 1880 and 86.9 per cent in 1890. This debt was evidently confined to the smaller cities, and the greater amount of it to the cities of between 100,000 and 300,000 population.

10. Funding.

Few general statements can be made concerning the purpose called "funding". From an average burden of $11.45 in 1880 there was a decline by 1890 to $2.61, followed by an increase to $7.15 by 1912. In all but Group III and the South Central section the burden of 1890 was smaller than that of 1880. The debt was also a smaller share of the total debt of each group and section in 1890, with the exceptions of Group III and the South Atlantic section.

In 1880 the funding debt of Group I was 24.8 per cent of the total group debt and 70.9 per cent of that for all cities, but by 1890 the amount had fallen from over sixty-five millions to less than a quarter of a million and to less than one per cent of the total funding debt and one-tenth of one per cent of the group's total debt. By 1904 it was 50 per cent of the total funding debt and in 1912 it had reached 83.2 per cent, but this was only 10.7 per cent of its group debt as compared to the high relation in 1880.

Evidently much of the funding debt of 1880 had been paid or refunded by 1890 for the actual amount of the debt was less in 1890 in every group and in the North Atlantic, North Central and Western sections, while the increases in the two southern sections

were small and the burden fell in the South Atlantic. Altho in but one section* and only in Group III was the burden so great in 1890 as in 1880, increases were apparent in most groups and sections by 1904. In all groups and sections funding was a less important share of total debt in 1912 than in 1880.

The number of cities with such debts increased each year, but the percentage of the total cities fell each year from 66 per cent in 1880 to 42 per cent in 1912.

11. Refunding.

Refunding is another debt for which it seems difficult to find a general tendency, and inasmuch as the figures given measure merely what has been left of such debt after as much as possible has been segregated under specific purposes, no valid comparisons can be made and an extended discussion of the figures would be useless.

After 1890 in Groups I and II and after 1880 in Groups III, IV and V, there was a general tendency for the per capita burden of this debt to fall. The same is true of the geographical sections with the exception of the Western cities, although there was a decline in that section from 1904 to 1912. Thirty cities had such debts in 1880 and the number grew each year until 85 was reached in 1912, 50 per cent of all cities in 1880 and 43 per cent in 1912. The same tendency to decline in extensiveness is evident in most of the groups and sections.

*South Central.

12. Miscellaneous Purposes.

It is unfortunate for our purpose that there are no tables in either the 1904 or the 1912 reports that give the items included under "miscellaneous" (1912) or "all other" (1904) for general purposes. The item so named in 1880 and 1890 covered a broader field and is not comparable to the later item. This item, "miscellaneous," increased materially from 1880 to 1890 and when purposes were again enumerated for separate cities in 1904 the classification was changed so that purposes that would have been called "miscellaneous"in 1890 were classed under separate headings.[50]

A word should now be said concerning a few of these purposes which have not already been discussed. The purpose called "charities, hospitals and correction"in 1912 was not considered as a separate purpose in the three earlier years; but it is of interest to know that these loans have become important enough to be given a special column in the main table and that fifty-eight cities had such debts in 1912; the burdens ranging from sixteen cents in Group IV and twenty cents in the South Atlantic section to $2.94 in Group II and $1.86 in the North Atlantic section. These debts were doubtless included under "miscellaneous" in other years.

50. As gas and electric, police placed with fire, municipal service enterprises, all other public service enterprises, charities(1912), local and general improvements(1904) and combined and unreported, - both funded and special assessment (1912), as well as the item above mentioned, "miscellaneous" for general purposes.

The debts for "municipal service industries"(1912) and for "combined general purposes and municipal service industries" (1904) are not entirely comparable and the items are not very well differentiated in either year. In both years these loans were unimportant and of very slight extent.

Most of the items included under "miscellaneous" in 1880 and 1890 appear to have been loans for which the purpose of issue could not be accurately ascertained, if at all; these loans appear in the later years under "general improvements" and "local improvements" in 1904 and under "combined and unreported" "funded and special assessment" in 1912. Such items amount to well toward ten per cent of the total debt for all cities in both 1904 and 1912. About two and one-half per cent of this was in the form of special assessment loans.

V. SUMMARY AND CONCLUSION.

In conclusion, it seems important to contrast briefly the indebtedness for the various purposes in 1880 with that in 1912, as well as to emphasize the important conclusions that can be drawn.

In contrasting 1880 with 1912 attention must be called first of all to the complete absence in the latter year of "war expenses" and "railroad and other aid" as sources of municipal indebtedness. The first had disappeared as a cause for municipal loans before 1880 and, since the decade of the seventies, the aid of private corporations thru the issue of municipal bonds has not been looked upon with favor.

Of perhaps equal interest is the growth in the burden and relative importance of the debt for "productive purposes" among the larger cities and in the North Atlantic, South Central and Western sections of the country. In the main this has resulted from the growing debts for "improvement of waterways" and "all other productive purposes," and in less degree to an increase in the indebtedness for "electric and gas." Loans for these three purposes, however, have been confined to a very limited number of cities and especially to the cities of over 300,000 population (Groups I and II). The debt for "waterworks," in all years the most important single purpose, was noticeably greater in 1912 only in the largest cities (Group I) and in the newer sections of the country (South Central and Western).

Table 4:
Changes in Total Debt for Specific Purposes: 1880-1912.

Purpose / Year	Number of Cities 1912	Number of Cities 1880	Per capita burden 1912	Per capita burden 1880	Per cent of total debt 1912	Per cent of total debt 1880
Total Indebtedness	195	59	90.58	69.21	100	100
Total productive debt	159	43	28.62	16.99	31.6	24.5
Waterworks	145	39	16.22	14.48	17.9	20.9
Improvement of waterways	21	22	4.15	1.81	4.6	2.6
Electric and gas	23	1a	.52	.68	.6	1.0
Cemeteries	10	6	.01	.02	*	*
[1]All other	49	(2)	11.88	1.83	13.1	2.6
Educational	187	28	10.76	1.39	11.9	2.0
Recreation	123	19	5.36	4.98	5.9	7.2
Highways	168	31	10.20	9.07	11.2	12.9
Sewers	161	30	5.96	2.30	6.6	3.5
Bridges	104	18	3.43	2.40	3.8	3.5
Buildings	86	36	2.34	2.74	2.6	4.0
Protection	113	13	1.25	.26	1.4	.4
War	a	24	a	3.31	a	4.8
Railroads and other aid	a	30	a	5.71	a	8.2
Funding	82	39	7.15	11.45	8.0	16.5
Refunding	85	30	3.81	6.36	4.2	9.2
Miscellaneous(all purposes)	a	20	a	2.25	a	3.2
Combined and unreported-funded	123	a	4.25	a	4.7	a
Special assessment	41	a	3.14	a	3.5	a
Miscellaneous(general)	123	a	3.99	a	4.4	a
Municipal industries	18	a	.30	a	.3	a

[1]Called "all other public service enterprises and investments" in 1912 and includes in both years "improvement of waterways" and "cemeteries". These are the only items in 1880.

[a]Item not included among separate items in the year indicated.

*Amounts to less than one-tenth of one per cent.

(2) Not computed, practically the same as that for"improvement of waterways".

Of the other purposes common to both years the most remarkable increase occurred in the debt for "educational" purposes. The burden of this debt was very much greater in 1912 in all groups and sections; more especially, it was very high in the largest cities (Group I) and in the North Atlantic and Western sections, and it was comparatively low in the southern cities.

The average burden of the total debt for "recreation" was but little more in 1912 than it was in 1880, although it was considerably greater in the groups of smaller cities and in those cities outside of the North Atlantic section.[1]

The loans for "highways" were the largest of those for public improvements in both years, but the burden of the total debt for this purpose was but little more in 1912 than in 1880, although it had grown substantially in the smaller cities and in those outside of the North Atlantic section. The burden of this section's debt in 1880 as well as that of the three larger population groups appears to have been abnormally large, but by 1912 it had decreased in Groups II and III although it had become even greater in the North Atlantic cities and in Group I (largest cities). The burden of the debt for "sewers", on the other hand, had increased steadily in all groups and sections, and in 1912 it was not only higher than that of 1880, it was also remarkably uniform in all the groups and sections. Although the average burden of the debt of all cities for "bridges" was but slightly larger in 1912, it had increased materially in the

1. The burden of the debt of the North Atlantic cities was already comparatively large in 1880.

cities outside of the North Atlantic section.

There was a decline in the per capita burden of loans for "buildings," and in the percentage of all cities with such debts. This condition may be due in part to a more exact separation of the costs for buildings under the various headings for more specific purposes. But there is no way to determine whether this is so, or whether there has actually been a relative decline in this type of indebtedness.

For purposes of "protection" the per capita burden was much increased in all groups and sections, while the increase in the number of cities with such debts is very noticeable. A special feature in 1912 is the heavier burden of the larger cities (Groups I and II) and of the North Atlantic and Western sections.

The burden of indebtedness for "funding" and "refunding" was less in 1912 than in 1880.

One of the most noticeable features in the trend of indebtedness since 1880, and more especially since 1890, is the increased number of cities that have reported debts for the purposes common to these years.[2] Of fifteen items comparable

2. This may be due in part to the establishment of more efficient accounting methods; but would not offset the general tendency.

for both 1880 and 1912, the percentage of all cities in debt for each purpose had increased in nine cases.[3]

Still another important aspect of the subject is the growth in the burden of total indebtedness in the North Atlantic and Western sections,[4] and its practical standstill in the North Central section. The larger debt of the North Atlantic section

3. NUMBER OF CITIES IN DEBT FOR COMPARABLE PURPOSES AND THE PER CENT THEY WERE OF ALL CITIES: 1880 and 1912.

	Number of cities	Per cent of total	Number of cities	Per cent of total
	1912		1880	
Total number of cities	195		59	
Total productive debt	159	81.5	43	72.9
Waterworks	145	74.3	39	66.1
Improvement of waterways	22	11.3	22	37.3
Electric and gas	23	11.8	1	1.7
Cemeteries	10	5.1	6	10.2
All other	49	25.1	28	47.4
Nonproductive debts				
Educational	187	95.9	28	47.5
Recreation	123	63.1	19	32.2
Highways	168	86.2	31	52.5
Sewers	161	82.6	30	50.8
Bridges	104	53.3	18	30.5
Buildings	86	44.1	36	61.0
Protection	113	57.9	13	22.0
Funding	82	42.1	39	66.1
Refunding	85	43.6	30	50.8

4. The burden of the debt of the Western section was more than 500 per cent larger in 1912 than it was in 1890.

is explained in part by the presence in that section of four of the largest cities;[5] the large debt of the Western section seems to be caused by the constantly increasing needs of the rapidly growing coast cities; while the small per capita burden of the North Central cities is due in part to the relatively large number of cities in Groups IV and V (30,000 to 100,000) that are found in that section, as well as to the small debts of the cities of Group I which it includes; while the differences in the constitutional debt limitations which are in general most stringent in the North Central states must be another important cause.[6]

Considering next the indebtedness of the population groups, it appears that the burden of indebtedness of the smaller cities (Groups II to V) was but little greater in 1912 than it was in 1880.[7] Between these two years, however, there had been a period of very rapid decline, which ended about 1890; while after 1890, and especially after 1904, the indebtedness of these

5. New York, Boston, Philadelphia and Pittsburg.
6. The smaller debts of the North Central cities are doubtless caused at least in part by the constitutional debt restrictions in some of the states. This limit is set at 5 per cent in Illinois, Iowa, Missouri and Wisconsin, and 2 per cent in Indiana, as compared with 7 per cent in Pennsylvania, and 10 per cent in New York, with rather liberal exemptions, and no such limits in Massachusetts and Connecticut. It may be that the middle Western cities are not building equipment so rapidly as they should. For example, the value of properties as given in the 1912 report on Statistics of cities show that New York owned properties valued at over $200 per capita, whereas the same kinds of properties owned by Chicago were valued at less than $90, and in St. Louis, at less than $100.
7. The burden of Group IV grew from $41.13 to $52.67; that of Group I from $84.08 to $129.05.

cities rapidly increased. The cities in these groups have been restricted in this study to definite population limits; but for the cities of Group I there is no upper limit (all over 500,000) and the burden of the debt of these cities was larger even in 1904 than it was in 1880 and increased very rapidly from 1904 to 1912.

This rapid increase in the burden of the debt of the largest cities adds proof to another conclusion: namely, that the burden of indebtedness tends to increase with the growth of population. Thus with but few exceptions the average burden of the debt of the various population groups has in each year presented a graded scale, highest for the cities of Group I and lowest for the cities of Group V. The greater per capita burden in the larger cities has been generally due to higher debts for particular purposes, to the general issuance of loans for a larger number of purposes by individual cities, or to loans for activities seldom attempted by smaller municipalities.

Considering next the total indebtedness of all cities, the debt in 1880 appears to have been abnormally high. In the unsettled period that followed the Civil War municipal debts probably soared higher and more rapidly than they would have done under more stable political and social conditions and in a more fully settled country. As this was also a period of rapid municipal growth, the debts of the time were the result both of the unsettled conditions and of the increasing demands of rapidly growing cities; of debts for extraordinary purposes as well as of debts for what are now considered to be normal functions of large

municipalities.[8]

After the reaction which followed the crisis of 1873 began a new era of increased indebtedness which has continued to the present. But in contrast with the debts of the years preceding 1880 the growth in indebtedness since 1890 has been for the most part due to loans for the normal functions of city governments; debts which have largely resulted in tangible, very generally salable, and frequently productive municipal assets. For most of these purposes the average burden of the debt has increased rapidly since 1890 and in most cases was larger in 1912 than it was in 1880. But although debts for both the productive and nonproductive purposes have increased, the greatest relative increase among the larger cities (Groups I and II) has been for productive purposes. On the other hand, there has been practically no change in this relationship in the groups of smaller cities.

Whether the activities for which these debts have been incurred have been properly assumed by our cities, and whether, if assumed, their cost should have been so largely shifted to the future, it is not the province of this study to determine. But it is evident that the cost of improving the equipment for performing many of the functions of city government has produced large debts, and that these have increased rapidly since 1890, until the burden of 1912 for most of these ordinary purposes is higher than it was in 1880. The demand for increased

8. An excellent description of some aspects of the increased municipal indebtedness prior to 1880 is found in Secrist's Restrictions on Public Indebtedness, op. cit.

municipal properties has grown more rapidly than the willingness, or ability, to pay the cost.

Table 5; Debts of Population groups	Group number	Per capita burden				Number of cities in debt				Per cent each debt is of the total debt of each group				Per cent each debt of the total debt for each purpose			
		1912	1904	1890	1880	1912	1904	1890	1880	1912	1904	1890	1880	1912	1904	1890	1880
Total productive debt	All	28.62	19.63	13.81	16.99	159	112	72	43	31.6	29.4	27.4	24.5	100	100	100	100
	I	43.06	31.42	17.33	18.05	9	6	3	3	33.4	33.7	24.1	21.5	64.7	66.7	43.1	41.4
	II	30.37	6.68	21.77	26.56	8	6	4	3	37.6	12.8	29.1	32.8	12.4	4.4	20.2	20.3
	III	16.35	15.34	10.08	16.26	33	20	14	10	25.3	28.3	22.7	25.6	11.8	14.3	17.7	23.5
	IV	14.17	10.80	9.86	10.67	45	34	21	10	26.9	24.5	27.3	25.9	6.9	8.4	11.2	6.7
	V	11.14	10.26	8.35	10.72	64	46	29	16	24.2	25.7	28.2	23.1	4.2	6.2	7.8	8.0
Waterworks	All	16.22	11.75	11.95	14.48	145	101	65	39	17.9	17.6	24.2	20.9	100	100	100	100
	I	17.80	14.10	13.35	12.90	9	6	3	3	13.8	15.1	23.3	15.3	47.2	50.0	38.3	34.7
	II	22.58	6.08	20.24	24.33	8	6	4	3	27.9	11.7	27.1	30.0	16.3	6.7	21.7	21.8
	III	14.81	14.73	9.80	15.62	31	19	13	10	22.9	27.2	22.0	24.6	18.8	22.9	19.9	26.5
	IV	12.81	9.49	9.04	10.64	41	32	20	8	24.3	21.5	25.1	25.9	10.9	12.3	11.8	7.9
	V	10.06	8.00	7.60	10.30	56	38	25	15	21.8	20.0	25.7	22.2	6.7	8.1	8.2	9.0
Improvement of waterways	All	4.15	---	1.85	1.81	21	--	23	22	4.6	--	3.7	2.6	100	--	100	100
	I	9.08	---	3.98	3.38	2	--	2	2	7.0	--	6.9	4.0	94.0	--	73.9	72.7
	II	.88	---	1.53	2.23	2	--	2	3	1.1	--	2.0	2.8	2.5	--	10.6	16.0
	III	.38	---	.29	.62	5	--	7	8	.6	--	.6	.9	1.9	--	3.8	8.4
	IV	.21	---	.77	.01	5	--	5	3	.4	--	2.2	.*	.7	--	6.5	0.1
	V	.36	---	.74	.40	7	--	7	6	.8	--	2.5	.9	.9	--	5.2	2.8
Electric and gas	All	.52	.21	---	.68	23	15	--	1	.6	.3	---	1.0	100	100	---	100
	I	.08	.10	---	1.75	2	1	--	1	.1	.1	---	1.8	7.0	18.9	---	100
	II	1.04	.23	---	---	2	1	--	--	1.3	.4	---	---	23.4	14.2	---	--
	III	.89	.27	---	---	6	5	--	--	1.4	.5	---	---	35.7	22.9	---	--
	IV	.91	.13	---	---	4	3	--	--	1.7	.3	---	---	24.4	9.4	---	--
	V	.46	.62	---	---	9	5	--	--	1.0	1.6	---	---	9.5	34.6	---	--
Cemeteries	All	.01	---	.01	.02	10	--	4	6	*	---	*	*	100	--	100	100
	I	.01	---	---	.02	1	--	--	1	*	---	---	*	48.4	--	--	49.9
	II	---	---	---	---	--	--	--	--	---	---	---	---	--	--	--	-
	III	.01	---	---	.02	2	--	--	2	*	---	---	*	10.2	--	--	33.3
	IV	.02	---	.05	.01	2	--	3	2	*	---	.1	*	19.9	--	90.3	7.1
	V	.02	---	.01	.01	5	--	1	1	*	---	*	*	21.4	--	9.7	9.7
All other, including improvement of waterways and cemeteries	All	11.88	7.66	1.86	1.83	49	44			13.1	11.5	3.7	2.6	100	100	100	100
	I	25.18	17.22	3.98	3.41	8	3			19.5	18.5	6.9	4.0	89.6	93.7		
	II	6.78	.36	1.53	2.23	4	4			8.4	.7	2.0	2.8	8.9	.6		
	III	.64	.34	.29	.64	12	10			1.0	.6	.6	.9	.7	.8		
	IV	.45	1.19	.82	.03	12	14			.9	2.7	2.3	*	.4	2.4		
	V	.63	1.65	.75	.42	13	13			1.4	4.1	2.5	.9	.3	2.5		

Table 5: Debts of Geographical sections	Section	Per capita burden 1912	1904	1890	1880	Number of cities in debt 1912	1904	1890	1880	Per cent each debt is of the total debt of each group 1912	1904	1890	1880	Per cent each debt of the total debt for each purpose 1912	1904	1890	1880
Total productive debt	All	28.62	19.63	13.81	16.99	159	112	72	43	31.6	29.4	27.4	24.5	100	100	100	100
	NA	43.50	31.42	17.33	18.05	66	53	35	26	35.1	34.8	31.4	25.2	74.2	81.3	73.6	73.9
	SA	16.75	8.95	21.24	16.48	13	9	5	3	24.1	15.6	29.0	25.2	3.8	3.4	8.9	5.9
	NC	10.00	6.65	6.35	12.69	46	33	21	13	20.4	17.2	20.6	28.5	10.6	10.6	14.0	18.5
	SC	16.39	7.53	5.50	3.95	19	9	6	1	22.7	14.3	9.9	5.9	3.8	2.1	2.1	1.2
	W	29.05	10.81	1.93	.05	15	8	4	1	36.7	27.9	30.2	.3	8.2	2.9	.7	*
Waterworks	All	16.22	11.75	11.95	14.48	145	101	65	39	17.9	17.6	24.2	20.9	100	100	100	100
	NA	21.65	16.83	16.78	17.98	62	51	33	24	17.5	18.8	27.5	21.6	64.5	73.4	74.3	74.4
	SA	10.38	7.45	16.42	14.77	12	7	5	3	14.9	13.0	22.4	22.6	4.2	4.2	8.5	7.0
	NC	7.40	5.80	5.58	10.38	42	29	19	11	15.1	15.0	18.1	23.3	13.8	15.5	14.2	17.4
	SC	15.69	7.13	4.92	3.28	17	7	5	1	21.8	13.5	8.9	4.9	6.5	3.4	2.2	1.2
	W	21.91	7.92	1.90	---	12	7	3	--	27.7	20.6	29.7	--	10.9	3.5	.8	--
Improvement of waterways	All	4.15	--	1.85	1.81	21	--	23	22	4.6	--	3.7	2.6	100	--	100	100
	NA	7.63	--	2.43	1.84	8	--	6	7	6.2	--	3.9	2.2	88.8	--	69.5	61.0
	SA	4.06	--	4.78	1.71	2	--	3	2	5.8	--	6.5	2.6	6.4	--	16.0	6.5
	NC	.01	--	.77	2.30	1	--	7	10	*	--	2.5	5.2	*	--	12.7	30.8
	SC	.17	--	.58	.67	5	--	3	1	.2	--	1.0	1.0	.3	--	1.7	1.9
	W	2.27	--	.03	.05	5	--	1	1	2.9	--	.5	.3	4.4	--	.1	.1
Electric and gas	All	.52	.21	--	.68	23	15	-	1	.6	.3	---	1.0	100	100	---	100
	NA	.13	.24	--	1.14	4	4	-	1	.1	.3	---	1.4	12.5	57.4	---	100
	SA	.46	.18	--	--	4	1	--	--	.7	.3	---	---	5.8	5.7	---	---
	NC	.35	.22	--	--	10	6	--	--	.7	.6	---	---	20.3	32.5	---	---
	SC	.02	.12	--	--	1	1	--	--	*	.2	---	---	.3	3.3	---	---
	W	3.90	.05	--	--	4	2	--	--	4.9	*	---	---	61.1	1.2	---	---
Cemeteries	All	.01	--	.01	.02	10	--	4	6	*	--	*	*	100	--	100	100
	NA	.02	--	.01	.03	4	--	3	4	*	--	*	*	53.8	--	69.9	86.2
	SA	--	--	.04	--	1	--	1	--	--	--	.1	---	--	--	30.1	---
	NC	.02	--	--	.01	3	--	--	2	*	--	---	*	36.7	--	--	13.8
	SC	.02	--	--	--	1	--	--	--	*	--	---	---	9.5	--	--	--
	W	--	--	--	--	--	--	--	--	--	--	---	---	--	--	--	--
All other: including improvement of waterways and cemeteries	All	11.88	7.66	1.86	1.83	49	44			13.1	11.5	3.7	2.6	100	100	100	100
	NA	21.72	14.07	2.44	1.86	21	17			17.5	15.7	3.9	2.2	88.4	94.2		
	SA	5.91	1.32	4.83	1.71	8	6			8.5	2.3	6.6	2.6	3.3	1.1		
	NC	2.25	.63	.79	2.31	20	11			4.6	1.6	2.5	5.2	5.7	2.6		
	SC	.68	.28	.61	.67	12	7			.9	.6	1.0	1.0	.4	.2		
	W	3.24	2.84	.03	.05	7	3			4.1	7.3	.5	.3	2.2	1.9		

Table 5: Debts of Population groups (Cont'd)	Group	Per capita burden 1912	1904	1890	1880	Number of cities in debt 1912	1904	1890	1880	Per cent each debt is of the total debt of each group 1912	1904	1890	1880	Per cent each debt of the total debt for each purpose 1912	1904	1890	1880
Educational	All	10.76	6.98	.78	1.39	187	126	31	28	11.9	10.4	1.6	2.0	100	100	100	100
	I	13.84	9.96	1.24	1.78	9	5	3	3	10.7	10.7	2.2	2.1	55.3	59.5	54.7	49.9
	II	9.59	4.82	.29	1.56	8	7	1	1	11.9	9.3	.4	1.9	10.4	8.9	4.8	14.5
	III	8.19	4.78	.81	1.28	38	21	9	7	12.6	8.8	1.8	2.0	15.7	12.5	25.1	22.6
	IV	8.23	5.18	.63	.59	54	38	10	5	15.6	11.7	1.7	1.4	10.6	11.3	12.6	4.6
	V	7.96	4.57	.17	.92	78	55	8	12	17.2	11.4	.6	1.9	8.0	7.7	2.8	8.4
Recreation	All	5.36	5.09	3.80	4.98	123	70	28	19	5.9	7.6	7.7	7.2	100	100	100	100
	I	8.70	9.42	7.79	10.62	9	5	2	3	6.7	10.1	13.6	12.6	69.8	77.2	70.5	83.2
	II	3.96	4.08	5.11	2.89	8	7	4	3	4.9	7.9	6.8	3.6	8.7	10.4	17.2	7.5
	III	3.83	1.94	1.30	1.17	31	20	10	6	5.9	3.6	2.9	1.8	14.8	7.0	8.3	5.8
	IV	1.76	1.59	.94	1.29	38	22	10	3	3.3	3.6	2.6	3.1	4.5	4.8	3.9	2.8
	V	1.14	.30	.03	.27	37	16	2	4	2.5	.7	.1	.6	2.3	.7	.1	.7
Highways	All	10.20	7.18	3.76	9.07	168	113	41	31	11.2	10.7	7.6	12.9	100	100	100	100
	I	15.39	10.83	3.22	10.43	8	5	1	3	11.9	11.6	5.6	12.4	64.9	62.9	29.5	44.8
	II	6.35	6.87	9.90	18.10	8	8	2	2	7.9	13.3	13.3	22.3	7.3	12.4	33.7	25.9
	III	5.92	3.67	3.21	9.52	32	17	9	9	9.2	6.8	7.2	14.9	12.0	9.3	20.7	25.8
	IV	5.64	3.38	2.06	1.97	50	29	11	7	10.7	7.7	5.7	4.8	7.7	7.2	8.6	2.3
	V	7.79	4.99	2.18	.83	70	54	18	10	16.9	12.5	7.4	1.8	8.2	8.2	7.5	1.2
Sewers	All	5.96	4.05	2.52	2.30	161	95	46	30	6.6	6.1	5.1	3.5	100	100	100	100
	I	6.26	4.39	1.09	1.90	9	5	3	3	4.8	4.7	1.9	2.3	45.2	45.1	14.9	32.1
	II	6.13	4.11	4.80	4.90	8	6	3	3	7.6	7.9	6.4	6.1	12.0	13.1	24.4	27.6
	III	6.90	5.02	3.75	2.31	35	19	11	8	10.7	9.3	8.4	3.6	23.9	22.7	36.1	24.6
	IV	3.46	2.44	3.04	2.48	39	24	14	6	6.6	5.5	8.4	6.0	8.1	9.2	18.9	11.6
	V	6.00	3.40	1.11	.73	70	41	15	10	13.0	8.5	3.8	1.6	10.8	10.0	5.7	4.0
Bridges	All	3.43	2.14	2.71	2.40	104	56	31	18	3.8	3.2	5.5	3.5	100	100	100	100
	I	4.72	3.26	5.64	5.29	9	3	2	2	3.7	3.5	9.9	6.3	59.1	63.3	71.4	85.8
	II	4.30	1.57	1.32	.89	7	4	3	2	5.3	3.0	1.8	1.1	14.7	9.5	6.2	4.8
	III	3.29	1.81	1.90	.05	28	15	6	1	5.1	3.3	4.3	*	19.8	15.4	17.0	.5
	IV	1.07	1.20	.72	.33	27	16	10	4	2.0	2.7	2.0	.8	4.3	8.6	4.2	1.5
	V	.66	.58	.24	1.42	33	18	10	9	1.4	1.5	.8	3.1	2.1	3.2	1.2	7.5
Buildings	All	2.34	2.31	2.45	2.74	86	73	48	36	2.6	3.4	5.0	4.0	100	100	100	100
	I	3.50	3.64	3.48	2.57	8	4	3	3	2.7	3.9	6.1	3.1	64.3	65.7	48.8	36.6
	II	2.63	1.17	2.19	4.37	7	7	3	3	3.3	2.3	2.9	5.4	13.2	6.6	11.5	20.7
	III	1.36	1.82	2.07	2.97	21	15	11	9	2.1	3.4	4.7	4.7	12.0	14.4	20.5	26.7
	IV	1.36	1.07	2.14	1.61	27	21	18	8	2.6	2.4	5.9	3.9	8.1	7.1	13.6	6.4
	V	.52	1.21	1.07	2.07	23	26	13	13	1.1	3.0	3.6	4.5	2.4	6.2	5.6	9.6

Table I: Debts of Population groups (Cont'd)	Group	Per capita burden				Number of cities in debt				Per cent each debt is of the total debt of each group				Per cent each debt of the total debt for each purpose			
		1912	1904	1890	1880	1912	1904	1890	1880	1912	1904	1890	1880	1912	1904	1890	1880
Protection	All	1.25	.45	.14	.26	113	52	21	13	1.4	.7	.3	.4	100	100	100	100
	I	1.66	.60	.17	.48	7	3	2	2	1.3	.6	.3	.6	56.8	55.6	40.9	72.0
	II	2.02	.52	.18	.18	8	3	2	2	2.5	1.0	.2	*	18.9	15.0	16.2	9.1
	III	.64	.40	.19	.10	25	12	5	1	1.0	.7	.4	*	10.5	6.5	33.3	9.5
	IV	.79	.24	.04	.13	35	16	6	2	1.5	.6	.1	.3	8.8	8.3	4.3	5.4
	V	.59	.17	.06	.08	38	18	6	5	1.3	.4	.2	.2	5.0	4.6	5.3	4.0
War	All	--	--	1.43	3.31	--	--	17	24	--	--	2.9	4.8	--	---	100	100
	I	--	--	3.28	6.09	--	--	3	2	--	--	5.7	7.2	--	--	78.9	71.6
	II	--	--	1.56	2.76	--	--	1	2	--	--	2.1	3.4	--	--	14.0	10.8
	III	--	--	.13	1.32	--	--	3	6	--	--	.3	2.1	--	--	2.2	9.8
	IV	--	--	.33	1.07	--	--	7	5	--	--	.9	2.6	--	--	3.6	3.5
	V	--	--	.13	1.12	--	--	3	9	--	--	.5	2.4	--	--	1.2	4.3
Railroad and other aid	All	--	--	3.67	5.71	--	--	32	30	--	--	7.4	8.2	--	--	100	100
	I	--	--	.26	.55	--	--	2	1	--	--	.5	.7	--	--	2.5	3.7
	II	--	--	8.82	4.11	--	--	2	2	--	--	11.8	5.1	--	--	30.8	9.3
	III	--	--	7.01	12.96	--	--	9	7	--	---	15.8	20.4	--	--	46.4	55.7
	IV	--	--	1.90	5.99	--	--	8	8	--	--	5.3	14.6	--	--	8.1	11.3
	V	--	--	3.48	8.92	--	--	11	12	--	--	11.8	19.3	--	--	12.3	19.9
Funding	All	7.15	4.08	2.61	11.45	82	74	51	39	8.0	6.1	5.3	16.5	100	100	100	100
	I	13.84	4.90	.05	20.82	5	5	1	3	10.7	5.3	.1	24.8	83.2	50.0	.6	70.9
	II	2.49	1.83	3.43	5.73	4	3	3	3	3.1	3.5	4.6	7.1	4.1	5.8	16.8	6.5
	III	1.69	5.02	5.17	4.42	18	17	10	7	2.6	9.3	11.6	7.0	4.9	22.5	48.1	9.5
	IV	2.61	3.15	4.30	5.69	27	19	21	9	5.0	7.1	11.9	13.8	5.1	11.8	25.8	5.4
	V	1.85	3.45	1.74	7.00	28	30	16	17	4.0	8.6	5.9	15.1	2.8	10.0	8.7	7.8
Refunding	All	3.81	4.98	7.71	6.36	85	75	52	30	4.2	7.4	15.6	9.2	100	100	100	100
	I	4.69	6.07	9.01	3.26	4	4	1	1	3.6	6.5	15.8	3.9	53.0	50.7	40.1	20.0
	II	1.26	1.40	8.58	5.83	4	3	2	2	1.6	2.7	11.5	7.2	3.9	3.6	14.3	11.9
	III	3.05	3.88	5.60	8.61	18	14	8	6	4.7	7.2	12.6	13.5	16.5	14.3	17.6	33.2
	IV	5.16	7.56	6.99	8.27	28	26	17	8	9.8	17.2	19.4	20.1	18.8	23.1	14.2	14.0
	V	2.77	3.45	8.23	10.41	31	28	24	13	6.0	8.6	27.9	22.5	7.8	8.2	13.8	20.8
Miscellaneous (All purposes)	All	--	--	4.05	2.25	--	--	45	20	--	--	8.2	3.2	--	--	100	100
	I	--	--	4.61	2.22	--	--	2	3	--	--	8.1	2.6	--	--	39.1	38.5
	II	--	--	6.66	3.12	--	--	4	2	--	--	8.9	3.9	--	--	21.1	18.0
	III	--	--	3.20	2.58	--	--	11	5	--	--	7.2	4.1	--	--	19.2	28.2
	IV	--	--	3.08	1.03	--	--	15	1	--	--	8.6	2.5	--	--	11.9	4.9
	V	--	--	2.75	1.83	--	--	13	8	--	--	9.3	3.9	--	--	8.8	10.4

Table 5: Debts of Population groups (Cont'd)	Group	Per capita burden				Number of cities in debt				Per cent each debt is of the total debt of each group				Per cent each debt of the total debt for each purpose			
		1912	1904	1890	1880	1912	1904	1890	1880	1912	1904	1890	1880	1912	1904	1890	1880
Combined and unreported-funded[1]	All	4.25	3.12	--	--	123	82	--	--	4.7	4.7	--	--	100	100	--	--
	I	3.21	2.18	--	--	8	5	--	--	2.5	2.3	--	--	32.5	29.1	--	--
	II	6.23	2.40	--	--	6	5	--	--	7.7	4.6	--	--	17.2	9.9	--	--
	III	4.76	4.16	--	--	28	15	--	--	7.4	7.7	--	--	23.1	24.4	--	--
	IV	5.56	3.33	--	--	37	20	--	--	10.5	7.6	--	--	18.1	16.3	--	--
	V	3.59	5.32	--	--	44	37	--	--	7.8	13.3	--	--	9.1	20.2	--	--
Special assessment[2]	All	3.14	2.18	--	--	41	20	--	--	3.5	3.3	--	--	100	100	--	--
	I	3.37	4.12	--	--	3	2	--	--	2.6	4.4	--	--	46.1	78.7	--	--
	II	.88	1.07	--	--	3	3	--	--	1.1	2.1	--	--	3.3	6.4	--	--
	III	6.02	.94	--	--	11	3	--	--	9.3	1.7	--	--	39.6	7.9	--	--
	IV	1.88	.89	--	--	11	8	--	--	3.6	2.0	--	--	8.3	6.2	--	--
	V	.77	.16	--	--	13	4	--	--	1.7	.4	--	--	2.7	.9	--	--
Miscellaneous (general)	All	3.99	4.41	--	--	123	75	--	--	4.4	6.6	--	--	100	100	--	--
	I	6.21	1.93	--	--	9	5	--	--	4.8	2.1	--	--	67.0	18.2	--	--
	II	4.63	15.35	--	--	8	6	--	--	5.7	29.6	--	--	13.6	45.0	--	--
	III	2.46	5.33	--	--	32	16	--	--	3.8	9.8	--	--	12.7	22.1	--	--
	IV	.93	3.05	--	--	35	23	--	--	1.8	6.9	--	--	3.2	10.5	--	--
	V	1.27	1.53	--	--	39	25	--	--	2.7	3.8	--	--	3.4	4.1	--	--
Municipal service industries	All	.30	.26	--	--	18	8	--	--	.3	.4	--	--	100	100	--	--
	I	.60	.45	--	--	3	1	--	--	.5	.5	--	--	86.3	70.6	--	--
	II	.04	--	--	--	2	--	--	--	*	--	--	--	1.4	--	--	--
	III	.11	--	--	--	5	--	--	--	.2	--	--	--	7.0	--	--	--
	IV	.03	.12	--	--	2	2	--	--	.1	.3	--	--	1.6	6.9	--	--
	V	.10	.50	--	--	6	5	--	--	.2	1.2	--	--	3.6	22.4	--	--

*The amount is too small to indicate on this table.
--No debt recorded for this purpose.
[1]"General improvements" for 1904.
[2]"Local improvements" for 1904.

Table 5: Debts of Geographical sections (Cont'd)	Section	Per capita burden				Number of cities in debt				Per cent each debt is of the total debt of each group				Per cent each debt of the total debt for each purpose			
		1912	1904	1890	1880	1912	1904	1890	1880	1912	1904	1890	1880	1912	1904	1890	1880
Educational	All	10.76	6.98	.78	1.39	187	126	31	28	11.9	10.4	1.6	2.0	100	100	100	100
	NA	15.99	10.79	.95	1.66	78	60	15	16	12.1	12.0	1.6	2.0	71.8	79.2	64.2	71.5
	SA	2.55	.09	.58	.34	13	3	2	2	3.7	.2	.8	.5	1.6	*	4.6	1.7
	NC	5.36	3.28	.67	.99	58	44	8	6	10.9	8.5	2.2	2.2	15.0	14.7	26.3	17.3
	SC	5.70	.84	.13	.55	21	9	3	2	7.9	1.6	.2	.8	3.6	.7	.9	2.1
	W	10.64	7.13	.60	2.73	17	10	3	2	13.4	18.6	9.4	17.0	8.0	5.3	4.0	7.4
Recreation	All	5.36	5.09	3.80	4.98	123	70	28	19	5.9	7.6	7.7	7.2	100	100	100	100
	NA	7.33	7.95	6.26	7.50	56	38	15	9	5.9	8.9	10.3	8.0	66.1	80.1	87.2	90.2
	SA	1.67	.40	1.46	.19	6	4	3	1	2.4	.7	2.0	.3	2.0	.5	2.4	.3
	NC	3.92	2.80	1.12	1.70	39	21	8	8	8.0	7.2	3.6	3.9	22.1	17.2	9.0	8.3
	SC	1.62	.74	.36	--	10	3	1	-	2.3	1.4	.7	--	2.0	.8	.5	--
	W	5.08	1.28	.70	1.56	12	4	1	1	6.4	3.3	10.9	9.8	7.7	1.3	.9	1.2
Highways	All	10.20	7.18	3.76	9.07	168	113	41	31	11.2	10.7	7.6	12.9	100	100	100	100
	NA	14.62	11.25	4.89	13.96	74	57	18	14	11.8	12.5	8.0	16.8	69.3	80.3	68.8	92.2
	SA	6.64	.69	1.04	.30	13	5	3	2	9.5	1.2	1.4	.5	4.3	.6	1.7	.2
	NC	5.16	3.11	2.40	2.29	38	32	14	12	10.5	8.0	7.6	5.2	15.3	13.5	19.5	6.1
	SC	9.78	4.42	7.13	2.58	21	12	5	3	13.6	8.4	12.9	3.9	6.4	3.4	9.9	1.5
	W	5.93	2.85	.03	--	12	7	1	--	7.5	7.4	.5	--	4.7	2.1	*	--
Sewers	All	5.96	4.05	2.52	2.30	161	95	46	30	6.6	6.1	5.1	3.5	100	100	100	100
	NA	5.04	4.07	3.33	2.23	68	46	26	17	4.1	4.5	5.5	2.7	40.9	51.5	69.9	57.9
	SA	9.86	.41	.83	2.25	13	3	2	1	14.1	.7	1.1	3.4	10.9	.7	2.0	6.7
	NC	5.77	5.25	2.17	3.01	45	31	15	10	11.8	13.6	7.1	6.8	29.2	40.5	26.2	31.7
	SC	10.66	2.72	.78	1.21	20	10	2	1	14.8	5.2	1.4	1.8	12.0	3.7	1.6	2.7
	W	5.13	2.78	.08	.57	15	5	1	1	6.5	7.2	1.3	3.6	7.0	3.6	2.0	.9
Bridges	All	3.43	2.14	2.71	2.40	104	56	31	18	3.8	3.2	5.5	3.5	100	100	100	100
	NA	4.61	3.18	4.02	3.63	44	30	15	10	3.7	3.5	6.6	4.4	64.9	75.9	78.3	90.4
	SA	.56	.05	.72	.18	4	1	2	1	.8	*	1.0	.3	1.1	.2	1.6	.5
	NC	3.04	1.37	1.72	.90	36	19	12	7	6.2	3.5	5.6	2.0	26.7	20.0	19.4	9.0
	SC	.63	.41	.34	--	10	3	2	--	.9	.8	.6	--	1.2	1.1	.7	--
	W	2.55	1.18	--	--	9	3	--	--	3.2	3.1	--	--	6.0	2.8	--	--
Buildings	All	2.34	2.31	2.45	2.74	86	73	48	36	2.6	3.4	5.0	4.0	100	100	100	100
	NA	2.99	3.68	3.35	2.70	39	39	30	20	2.4	4.1	5.5	3.2	61.8	81.7	72.3	59.0
	SA	1.57	.22	3.52	5.09	5	4	4	4	2.3	.4	4.8	7.8	4.4	.6	8.9	12.8
	NC	1.98	.86	1.06	2.18	25	20	13	9	4.0	2.2	3.4	4.9	25.6	11.7	13.1	19.3
	SC	.63	.53	1.15	1.88	6	4	2	1	.9	1.1	2.1	2.8	1.8	1.3	2.5	3.6
	W	1.82	2.06	1.55	3.80	11	5	3	2	2.3	5.4	24.2	24.0	6.3	4.7	3.3	5.2

Table 5: Debts of Geographical sections (Cont'd)	Section	Per capita burden				Number of cities in debt				Per cent each debt is of the total debt of each group				Per cent each debt of the total debt for each purpose			
		1912	1904	1890	1880	1912	1904	1890	1880	1912	1904	1890	1880	1912	1904	1890	1880
Protection	All	1.25	.45	.14	.26	113	52	21	13	1.4	..7	.3	.4	100	100	100	100
	NA	1.68	.61	.22	.39	60	30	13	7	1.4	.7	.4	.5	64.7	69.8	82.5	88.6
	SA	.59	.04	.03	--	5	3	1	--	.8	.1	*	--	3.1	.7	1.3	--
	NC	.61	.39	.07	.12	31	15	6	6	1.2	1.0	.2	.3	14.7	27.1	15.8	11.4
	SC	.60	.06	.01	--	9	3	1	--	.9	.1	*	--	3.2	.8	.3	--
	W	2.19	.14	--	--	8	1	--	--	2.8	.4	--	--	14.2	1.6	--	--
War	All	--	--	1.43	3.31	--	--	17	24	--	--	2.9	4.8	100	100	100	100
	NA	--	--	2.13	5.27	--	--	10	20	--	--	3.5	6.3	--	--	78.9	95.3
	SA	--	--	3.31	2.22	--	--	2	1	--	--	4.5	3.4	--	--	14.3	4.6
	NC	--	--	.31	*	--	--	5	2	--	--	1.0	*	--	--	6.7	*
	SC	--	--	--	.02	--	--	--	1	--	--	--	*	--	--	--	*
	W	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Railroad and other aid	All	--	--	3.67	5.71	--	--	32	30	--	--	7.4	8.2	--	--	100	100
	NA	--	--	1.54	3.20	--	--	13	13	--	--	2.5	3.9	--	--	22.2	33.6
	SA	--	--	17.80	7.26	--	--	4	3	--	--	24.3	11.1	--	--	30.0	8.8
	NC	--	--	4.98	11.07	--	--	9	10	--	--	16.2	24.9	--	--	41.4	47.1
	SC	--	--	4.31	10.24	--	--	4	3	--	--	7.8	15.4	--	--	6.2	9.3
	W	--	--	.24	1.92	--	--	2	1	--	--	3.8	12.1	--	--	.3	1.3
Funding	All	7.15	4.08	2.61	11.45	82	74	51	39	8.0	6.1	5.3	16.5	100	100	100	100
	NA	12.28	4.50	2.24	15.55	33	33	23	20	9.9	5.0	3.7	18.7	83.1	56.6	45.5	81.4
	SA	8.64	5.44	5.14	8.32	9	3	5	4	12.4	9.5	7.0	12.7	7.9	8.9	12.2	5.0
	NC	1.01	3.53	1.63	4.15	18	24	13	10	2.1	9.0	5.3	9.4	4.3	27.1	19.0	8.9
	SC	2.89	3.25	10.79	7.10	16	10	5	3	4.0	6.2	19.5	10.7	2.7	4.4	21.7	3.2
	W	1.77	2.40	.81	4.64	6	4	5	2	2.2	6.3	12.7	29.3	2.0	3.1	1.6	1.5
Refunding	All	3.81	4.98	7.71	6.36	85	75	52	30	4.2	7.4	15.6	9.2	100	100	100	100
	NA	4.24	4.79	6.98	3.02	27	22	17	15	3.4	5.3	11.4	3.6	53.9	49.3	47.9	28.5
	SA	9.10	11.31	10.83	22.29	12	8	5	5	13.0	19.7	14.8	34.1	15.7	15.1	8.7	24.2
	NC	2.63	4.49	6.65	4.38	24	30	22	6	5.4	11.6	21.6	9.9	20.8	28.2	26.3	16.7
	SC	3.83	4.84	24.75	37.23	14	9	5	3	5.3	9.2	44.7	56.1	6.8	5.4	16.9	30.3
	W	1.33	1.85	.45	.56	8	6	3	1	1.7	4.8	7.0	3.5	2.8	1.9	.3	*
Miscellaneous (all purposes)	All	--	--	4.05	2.25	--	--	45	20	--	--	8.2	3.2	--	--	100	100
	NA	--	--	5.93	3.23	--	--	29	13	--	--	9.7	3.9	--	--	77.4	86.0
	SA	--	--	6.72	.42	--	--	4	1	--	--	9.2	.6	--	--	10.2	1.3
	NC	--	--	1.61	.83	--	--	11	4	--	--	5.2	1.9	--	--	12.1	9.0
	SC	--	--	--	1.62	--	--	--	2	--	--	--	2.4	--	--	--	3.7
	W	--	--	*	--	--	--	--	--	--	--	*	--	--	--	*	--

Table 5: Debts of Geographical sections (Cont'd)	Section	Per capita burden				Number of cities in debt				Per cent each debt is of the total debt of each group				Per cent each debt of the total debt for each purpose			
		1912	1904	1890	1880	1912	1904	1890	1880	1912	1904	1890	1880	1912	1904	1890	1880
Combined and unreported: funded[1]	All	4.25	3.12	--	--	139	102	--	--					100	100	--	--
	NA	3.44	2.16	--	--	61	42	--	--					39.1	35.6	--	--
	SA	8.30	10.45	--	--	14	3	--	--					12.9	22.3	--	--
	NC	3.57	1.77	--	--	29	20	--	--					25.4	17.8	--	--
	SC	3.12	11.16	--	--	15	11	--	--					20.7	19.9	--	--
	W	.93	2.63	--	--	4	6	--	--					1.8	4.4	--	--
Combined and unreported: special assessment[2]	All	3.14	2.18	--	--	41	20	--	--					100	100	--	--
	NA	2.72	2.90	--	--	17	8	--	--					42.0	68.0	--	--
	SA	.13	--	--	--	1	--	--	--					.3	--	--	--
	NC	2.36	1.75	--	--	18	9	--	--					22.7	25.1	--	--
	SC	3.16	--	--	--	2	--	--	--					6.8	--	--	--
	W	10.95	2.80	--	--	4	3	--	--					28.3	6.8	--	--
Miscellaneous (General)	All	3.99	4.41	--	--	123	75	--	--	4.4	6.6	--	--	100	100	--	--
	NA	4.93	2.72	--	--	50	36	--	--	4.0	3.0	--	--	59.8	31.6	--	--
	SA	3.23	16.33	--	--	11	6	--	--	4.6	28.5	--	--	5.3	24.6	--	--
	NC	3.47	3.41	--	--	30	22	--	--	7.1	9.0	--	--	26.3	24.2	--	--
	SC	2.84	15.09	--	--	16	9	--	--	3.9	28.6	--	--	4.8	19.0	--	--
	W	1.83	.48	--	--	7	2	--	--	2.3	1.2	--	--	3.7	.6	--	--
Municipal service industries	All	.30	.26	--	--	18	8	--	--	.3	.4	--	--	100	100	--	--
	NA	.48	*	--	--	4	1	--	--	.4	*	--	--	78.4	.4	--	--
	SA	.13	3.00	--	--	1	2	--	--	.2	5.2	--	--	2.9	75.8	--	--
	NC	.16	--	--	--	11	--	--	--	.3	--	--	--	16.2	--	--	--
	SC	.11	1.13	--	--	2	5	--	--	.2	2.1	--	--	2.6	23.7	--	--
	W	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

*The amount is too small to indicate in this column.
--No debt is recorded for this purpose.
A blank space in any column indicates simply that the results have not been computed for that particular column.
[1] Composed of "general improvements" for 1904.
[2] Composed of "local improvements" for 1904.

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